PB85-109155

Final Environmental Impact Statement for South Escambia and Santa Rosa Counties, Florida

(U.S.) Environmental Protection Agency
Atlanta, GA

Sep 84

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This Final Environmental Impact Statement addresses proposed wastewater facilities for South Escambia and Santa Rosa Counties, Florida. Numerous wastewater management alternatives have been evaluated with particular attention to water quality in the area's surface and groundwater resources and the impacts of projected population growth on the sensitive natural and human resources of the area.

KEYWORDS: *Sewage treatment, *Environmental impact statements-final, *Escambia County(Florida), *Santa Rosa County(Florida), *Alternative planning.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET
ATLANTA, GEORGIA 30365

SEP 28 1984

TO ALL INTERESTED AGENCIES, PUBLIC GROUPS, AND CITIZENS:

Enclosed for your review and comment is the Final Environmental Impact Statement (EIS) for wastewater management in South Escambia and Santa Rosa Counties, Florida.

This EIS was prepared in compliance with the National Environmental Policy Act and implementing Agency regulations (40 CFR Part 6, November 6, 1979). In accordance with these regulations, the Final EIS will be filed with EPA's Office of Federal Activities. Availability of the EIS will then be announced in the Federal Register, beginning a 30-day comment period. (The Federal Register date is the same as the date of this notice). This Agency will take no administrative action on this project until the close of the comment period.

We will appreciate your review of this document and any comments you may have. Please send all comments to:

Mr. Robert Cooper, Project Officer
NEPA Compliance Section
Environmental Assessment Branch
U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

PB85-109155

United States
Environmental Protection
Agency

Region 4
345 Courtland Street, NE
Atlanta, GA 30365

EPA 904/9-84 122
September 1984

EPA

Environmental Impact Statement

Final

South Escambia and Santa Rosa Counties, Florida Wastewater Management

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FINAL
ENVIRONMENTAL IMPACT STATEMENT
for
SOUTH ESCAMBIA AND SANTA ROSA COUNTIES, FLORIDA

Prepared by
U.S. Environmental Protection Agency
Region IV
Atlanta, Georgia 30365

This Final EIS addresses proposed wastewater facilities for South Escambia and Santa Rosa Counties, Florida. Numerous wastewater management alternatives have been evaluated with particular attention to water quality in the area's surface and groundwater resources and the impacts of projected population growth on the sensitive natural and human resources of the area.

Comments and inquiries should be forwarded to:

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Approved by:

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Regional Administrator

August 21, 1984
Date

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EXECUTIVE SUMMARY FOR THE ENVIRONMENTAL IMPACT STATEMENT

SOUTH ESCAMBIA AND SANTA ROSA COUNTIES, FLORIDA WASTEWATER FACILITIES

Draft ( )

Final (X)

Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30365

Type of Action: Administrative Action (X)

Legislative Summary ( )

EXECUTIVE SUMMARY

PART A - NEED FOR ACTION

This EIS is being prepared by the U.S. Environmental Protection Agency (USEPA) Region IV to address the provision of federal funds for the construction of wastewater management facilities in South Escambia and Santa Rosa Counties, Florida. This area is located in northwestern coastal Florida, adjacent to Alabama. Pensacola is the metropolitan center of the study area, which also includes the incorporated area of Gulf Breeze, the Gulf Breeze Peninsula, and two barrier islands: Santa Rosa Island and Perdido Key.

Alternatives have been developed and evaluated for this EIS based on the existing sewer service areas in Escambia and Santa Rosa Counties. Projected sewer service areas have also been developed based on projected population densities and proximity to existing service areas. The existing Escambia County service areas that will be considered as components of wastewater management systems are:

- Pensacola - The Pensacola service area is defined as the city of Pensacola plus those populated peripheral zones with collection and transportation facilities that utilize the Pensacola Main Street treatment and disposal facilities and those populated peripheral zones not currently sewered. The area is served by the Main Street plant operating at 50 percent of capacity with discharge to Pensacola Bay.

- Pen Haven - Since the inception of the EIS, this treatment facility has been phased out, with flows from the service area conveyed to the Main Street plant.

- Avondale - An existing sewered area adjacent to Pensacola currently served by a secondary treatment facility discharging to the Bayou Marcus. Wastewater flow to the plant equals its capacity. This facility is under a consent decree to close by September 1, 1985. Some flows are already being diverted to the Main Street plant.

- Warrington - An existing sewered area on the southwest fringe of Pensacola served by a secondary treatment facility with flow at 70 percent of capacity. Plant effluent discharges to Bayou Chico Creek. This facility is under a Temporary Operating Permit and is to be phased out.

- Moreno Courts - An existing sewered area on the southwest fringe of Pensacola just south of the Warrington service area. This area is served by a secondary treatment facility operating at approximately 60 percent of capacity with discharge to percolation ponds adjacent to Bayou Chico Creek.

- Scenic Hills - A sewered area just north of Pensacola served by a secondary treatment facility operating at 30 percent of capacity with discharge to land application.

Sewer service areas in Santa Rosa County are less extensive than those in Escambia County; however, wastewater management needs are projected to increase significantly by the year 2000. Santa Rosa County service areas that will be considered as components of wastewater management systems are:

- Gulf Breeze - The Gulf Breeze service area is the major service area of the Santa Rosa County portion of the study area, located on the western end of the Gulf Breeze Peninsula. This service area encompasses the incorporated area of Gulf Breeze and the adjacent unincorporated area and is served by the Gulf Breeze treatment plant operating at approximately 50 percent capacity and discharging to Santa Rosa Sound.

- Pensacola Beach - Pensacola Beach represents the only relatively densely populated service area on Santa Rosa Island. This area is served by a secondary treatment plant currently operating at capacity and discharging to Santa Rosa Sound. Although Pensacola Beach is located in Escambia County, this service area is evaluated with the Santa Rosa County service areas because of its location.

- Navarre Beach - The Navarre Beach service area is located in the eastern portion of Santa Rosa Island and is served by a secondary treatment plant discharging to Santa Rosa Sound.

- Santa Rosa Shores - The Santa Rosa Shores subdivision on the Gulf Breeze Peninsula is served by a small-scale treatment plant with spray irrigation to a local golf course.

In 1978, the local applicants completed preparation of a 201 Wastewater Facilities Plan. The Plan proposed an extensive and costly regional system.

Two new regional plants were proposed, one in southwest Escambia County with discharge by outfall into the Gulf of Mexico and one in southern Santa Rosa County with discharge by land application at Eglin Air Force Base. The plan became controversial due to a high potential for growth in environmentally sensitive areas. The most controversy centered on the barrier islands of Perdido Key and Santa Rosa Island. The 201 Plan was based on the assumption that extensive resort oriented growth would occur on these islands. This 201 Plan generated five central issues which are addressed in the EIS. These issues are:

1. Concerns about the impacts of new development promoted by federally supported wastewater facilities on environmentally sensitive coastal areas, including wetlands, floodplains and two barrier islands
2. Inconsistencies in the population projections between the 201 Plan and the approved 208 Plan
3. Concern over the construction and operation impacts of the 201 proposed Gulf outfall for the developing southwestern portion of the study area
4. The viability of the 201 proposed land application site on the Eglin Air Force Base to serve the Gulf Breeze peninsula and Santa Rosa Island
5. The protection of sensitive estuarine and recreational waters.

Because of the controversy surrounding the 201 Plan and potential impacts to environmentally sensitive areas, the Environmental Protection Agency (EPA) decided to prepare an EIS with respect to wastewater management facilities to serve South Escambia and Santa Rosa Counties. Subsequently a Notice of Intent to conduct the EIS was issued by the EPA Regional Administrator in May of 1980.

PART B - DESCRIPTION OF THE ALTERNATIVES

Projected populations and wastewater flows were developed for the study area. Feasible alternatives were then developed by combining wastewater service configurations with treatment and disposal options. The remainder of this section presents a description of the final set of alternatives for wastewater management which were evaluated in the EIS.

1. Escambia County

Alternative 1

This alternative provides centralized wastewater service with a new Southwest County treatment plant. This plant would have secondary treatment with discharge by outfall to the Gulf of Mexico. This is the 201 Alternative which includes the Avondale, Pen Haven, Warrington, Northwest, Perdido Key and Southwest Escambia service areas with a combined flow of 7.7 mgd.

Alternative 2

This alternative provides centralized wastewater service with new treatment plants for the Southwest County and Perdido Key areas. The Southwest

County treatment plant would have secondary treatment with discharge by land application. The capacity of this plant would be 0.54 mgd with 50 percent of the area's population served. The Perdido Key treatment plant would have secondary treatment with discharge by land application. Projected capacity is 1.7 mgd with 100 percent of the population sewered. The Warrington, Avondale and Moreno Courts treatment plants would be phased out with flows conveyed to the Main Street plant for treatment and disposal. Centralized sewer service would be provided to the Northwest area with conveyance to the Main Street plant for treatment and disposal.

Alternative 3

This alternative continues current wastewater management practices of use of package plants and septic tanks in Southwest County, Perdido Key and Northwest County. The Warrington, Avondale and Moreno Courts treatment plants would be phased out with flows conveyed to the Main Street plant for treatment and disposal.

2. Santa Rosa Island/Gulf Breeze Peninsula

Alternative 1

This is the 201 Plan Alternative. A new regional plant would be constructed on the eastern end of the Gulf Breeze Peninsula with disposal by land application at the Eglin Air Force Base. Capacity of the plant would be 8.0 mgd with secondary treatment. The plant would treat flows from Gulf Breeze, Pensacola Beach and Navarre Beach.

Alternative 2

This alternative would convey flows from Pensacola Beach and Gulf Breeze to the Main Street plant for treatment and disposal. Flows from Navarre Beach would be treated at the existing treatment plant with land application.

Alternative 3

This alternative involves expansion of the Pensacola Beach plant to 2.4 mgd with the existing level of treatment and discharge point. Class 1 reliability will be provided. The existing plant at Navarre Beach would remain at its current capacity. The City of Gulf Breeze would continue treatment and disposal at the existing location with expansion from 0.5 to 0.8 mgd. The continued use of package plants and septic tanks is projected for the Gulf Breeze Peninsula.

Alternative 4

This alternative conveys flows from Pensacola Beach and Gulf Breeze to Pensacola Bay following treatment at Gulf Breeze. Flows from Navarre Beach would be treated at the existing plant with discharge by land application.

PART C - EVALUATION OF ALTERNATIVES

The alternatives described in Part B were evaluated in terms of cost, operability, implementability, and environmental impact. A summary of the evaluation is presented below:

1. Cost

Escambia County:
Alternative 1 - $64.8 million
Alternative 2 - $25.3 million
Alternative 3 - $9.0 million

Santa Rosa County:
Alternative 1 - $36.9 million
Alternative 2 - $17.3 million
Alternative 3 - $7.4 million
Alterantive 4 - $10.8 million

2. Operability

Operability considerations do not eliminate any of the final alternatives. If wastewater is conveyed to a regional facility rather than continuing operation of several smaller treatment plants, both operability and reliability may be improved due to increased staff size and newness of the facility. However, no significant long term problems have resulted from the operation of the existing facilities.

3. Implementability

The Main Street treatment plant as well as the Avondale and Warrington facilities are under the control of the Escambia County Utilities Authority. Therefore, no implementation problems are involved with the diversion of these flows to Main Street. The Moreno Courts treatment plant is under the jurisdiction of the Pensacola Housing Authority but few implementation problems are anticipated if the Authority chooses to participate in the recommended action. Implementation of the Gulf outfall alternative will be more difficult than other options due to the uncertainties associated with siting and constructing the outfall. In the Santa Rosa area, the local alternative is considered to be the most implementable because there would be no need for coordination of facilities construction, expansion, or operation with these other local authorities. The implementability of the 201 alternative is questionable due to the lack of a suitable site for land disposal of the effluent.

4. Environmental Impacts

Based on the environmental analysis, extensive water quality problems resulting from most existing discharges have not been documented. The existing Avondale and Warrington treatment plants, however, are causing problems now and will be eliminated under all the alternatives. Further, data to assess fully the impacts of the Main Street plant on Pensacola Bay are still being collected. The construction of new regionalized systems with capacity for significant amounts of growth, could have the potential to induce environmental impacts. The sensitive barrier island, wetland, and estuarine environments would be subject to intensive developmental pressure. The comprehensive land use and development controls which would be necessary to protect environmental quality are not in place. The area most likely to experience significant adverse environmental impacts is Perdido Key where

Escambia County is projecting and encouraging a population increase from 3,432 to 36,710 over the next two decades.

PART D - DESCRIPTION OF THE PREFERRED ALTERNATIVE

1. Escambia County

The conveyance of flows from the Warrington and Avondale service areas to the Main Street plant is recommended. This option removes wastewater discharges to Bayou Chico and Bayou Marcus Creek which will improve water quality and meet the objectives of the Florida Department of Environmental Regulation. Further, it is recommended that the Moreno Courts effluent also be conveyed to Main Street given the elevated nitrogen levels observed in percolation pond monitoring wells, proximity of percolation ponds to Jones Swamp Creek-Bayou Chico, direction of groundwater flow toward the creek, documented water quality problems in Bayou Chico and proximity of the Warrington conveyance lines. Based on current flows and conveyances from the three treatment plants recommended for action, the Main Street plant should have sufficient capacity. This proposed action is not anticipated to exceed the projected capacity of the Main Street plant and is not intended to lead to such action. EPA funding will be made available for these water quality improvement actions if within reach on the state priority list.

The continuation of current wastewater management practices is recommended for the Southwest County, Perdido Key and Northwest County areas. No significant water quality or public health problems have been documented or are projected in these areas assuming applicable permitting procedures are followed. As the density of development increases, however, setback requirements and distances between percolation ponds will be more critical and these factors should be emphasized by DER in their permitting process. The recommended action avoids encouraging higher population densities which would increase the stress on water quality, wetlands and the sensitive barrier island environment. It is important to note that the assessment that current practices are and should be adequate in the Southwest, Northwest and Perdido Key areas, leading to the No Action decision, is based on 208 population projections which are the basis for EPA decision making. Current wastewater management practices might not be adequate for population levels greater than projected by the 208 Plan.

2. Santa Rosa County

The continuation of current wastewater managment practices is recommended for Santa Rosa Island and the Gulf Breeze Peninsula. All discharges in this area are currently meeting their effluent limits. No significant water quality or public health problems have been documented which would justify the construction of major new facilities. The provision of regional systems with additional capacity could encourage growth and development of the sensitive barrier island environment. Expansion of existing facilities at local expense to accommodate growth is expected.

If future changes to effluent limits for Santa Rosa Sound require no discharge or very stringent treatment levels that are not cost-effective to meet at each small plant, conveyance of secondary effluent to Pensacola Bay for discharge should be reconsidered. Should such a system be implemented in the future, EPA should reassess the potential for significant stimulation of development of sensitive areas in making grant participation decisions.

E. DRAFT EIS COMMENTS

Either written or oral comments on the Draft EIS were received from the following sources:

Federal Agencies

Advisory Council on Historic Preservation
U.S. Department of Agriculture, Soil Conservation Service
U.S. Department of the Air Force, Eastern Region Civil Engineer
U.S. Department of the Army, Mobile District Corps of Engineers
U.S. Department of Commerce, National Oceanic and Atmospheric Assocation
U.S. Department of the Interior, Southeast Region

State Government

Florida Department of Agriculture and Consumer Services
Florida Department of Community Affairs
Florida Department of Environmental Regulation
Florida Department of Natural Resources
Florida Department of State
Florida Department of Transportation
Florida Game and Fresh Water Fish Commission
Northwest Florida Water Management District
Office of the Governor

Local/Regional Government

City of Gulf Breeze
City of Navarre Beach
Escambia County
Escambia County Utilities Authority
West Florida Regional Planning Council

Interest Groups

Frances M. Western Audubon Society
Perdido Key Development Association

CHAPTER I - PURPOSE AND NEED FOR ACTION

A. Purpose of the EIS

Concerns within the past decade for preservation of the integrity of the environment led to the adoption of Public Law 91-190, the National Environmental Policy Act (NEPA) of 1969. Within this Act are the national environmental policies and goals intended to mitigate mistakes of the past through careful and coordinated planning efforts. As stated in the law the following declaration was issued: "a national policy shall be established which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological system and natural resources important to the Nation..."

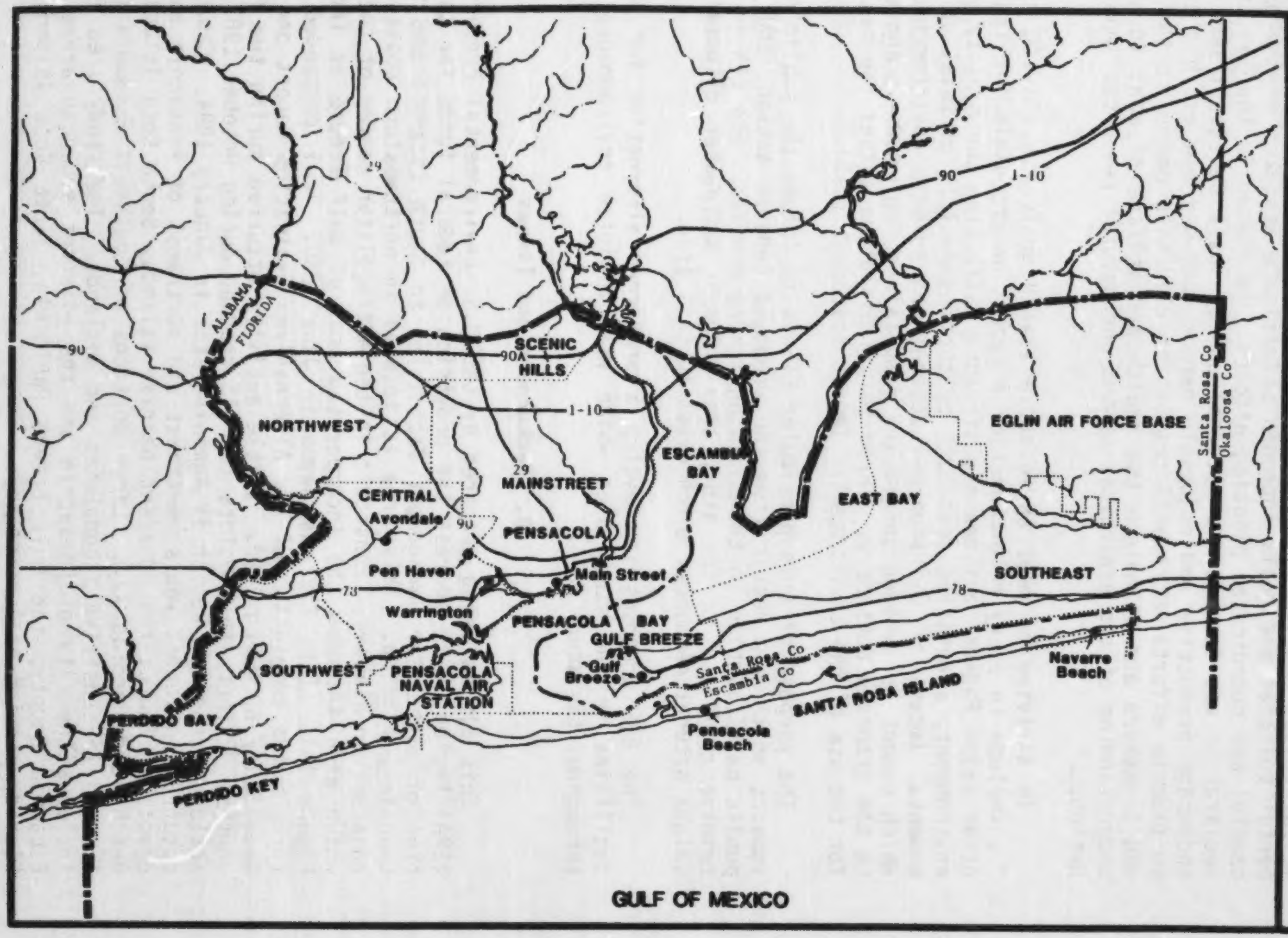
In striving to meet these above stated goals P.L. 91-190 stipulates: "...include in every recommendation a report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on the environmental impact of the proposed action; and adverse environmental effects which cannot be avoided should the proposal be implemented; and alternatives to the proposed actions..." From this legislation arises the basic framework for the use of the Environmental Impact Statement (EIS).

The purpose of this particular EIS is to inform the public of potential impacts which may result from the proposed Federal action, and to enable public participation in the decision making process. The EIS is intended to resolve conflicts in the study area between wastewater disposal and the unique natural resources which exist in this area.

The EIS proposes to develop a preferred alternative for wastewater facilities in the study area which will minimize environmental impacts throughout the study area.

B. Background and Issues

This EIS is being prepared by the U.S. Environmental Protection Agency (EPA) Region IV to address the provision of federal funds for the construction of wastewater management facilities in South Escambia and Santa Rosa Counties, Florida. This area is located in northwestern coastal Florida, adjacent to Alabama. Pensacola is the metropolitan center of the study area, which also includes the incorporated area of Gulf Breeze as indicated by Figure I-1. This EIS was begun in June 1980. Work proceeded smoothly through the completion of the Alternatives Evaluation Report and Perdido Key Case Study by March 1982. Little activity occurred during the following 18 months. Efforts to complete the EIS resumed during October 1983, leading to action by the EPA Region IV Administrator in January 1984. Urbanization has occurred in recent years northeast and northwest of Pensacola and along the coast, including the adjacent barrier islands, Santa Rosa Island (Pensacola Beach) and Perdido Key. Large portions of Southwest Escambia County are located in sensitive floodplains and wetlands. The study area for this EIS includes the city of Pensacola and the adjacent suburban areas, Southwest Escambia County, the Gulf Breeze Peninsula, Santa Rosa Island, and the Florida portion of Perdido Key.


90
1-10
29
SCENIC HILLS
90A
ALABAMA
FLORIDA
NORTHWEST
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ESCAMBIA BAY
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MAINSTREET
CENTRAL
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Pen Haven
Main Street
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Warrington
PENSACOLA BAY
GULF BREEZE
Gulf Breeze
SOUTHWEST
PENSACOLA NAVAL AIR STATION
PERDIDO BAY
PERDIDO KEY
Santa Rosa Co
Escambia Co
SANTA ROSA ISLAND
Pensacola Beach
EAST BAY
SOUTHEAST
78
EGLIN AIR FORCE BASE
Santa Rosa Co
Okaloosa Co
Navarre Beach
GULF OF MEXICO
● Existing Wastewater Plants
N

SOUTH ESCAMBIA AND SANTA ROSA COUNTIES E.I.S.

Figure I-1

EIS Study Area

Wastewater facilities planning studies were initiated in 1975 in response to the projected population growth and wastewater management needs of the Pensacola Region. Six governmental entities were involved in the initial planning efforts:

- o Escambia County, acting officially through its Commission
- o Santa Rosa County, acting officially through its Commission
- o City of Pensacola, acting officially through its Council
- o City of Gulf Breeze, acting officially through its Council
- o Santa Rosa Island Authority, acting officially through its Board of Directors
- o Santa Rosa County Beach Administration (later changed to the Navarre Beach Advisory Council), acting officially through its Board of Directors.

Through official enabling resolutions, the six governmental entities formed a steering committee with responsibility for 201 planning policy decisions and named the City of Pensacola as the lead agent for receiving and disbursing federal grants. A consortium of five consultants was assembled to prepare the 201 Facilities Plan. This consortium included:

- o Consoer, Townsend & Associates (Escambia County)
- o Baskerville-Donovan Engineers, Inc. (Santa Rosa County, City of Gulf Breeze, and the Santa Rosa County Beach Administration)
- o Flood & Associates, Inc. (City of Pensacola)
- o Tom Justice & Associates (Santa Rosa Island Authority)
- o Theta Analysis, Inc. (environmental consultants representing all participants).

Actual wastewater facilities planning efforts were undertaken in early 1976, culminating in the completion of a Draft 201 Facilities Plan in April 1978.

The EIS was initiated in response to a number of issues raised by EPA during review of the 201 Facilities Plan. A summary of these issues follows:

1. Impact of Federal Funding on Sensitive Coastal Areas--New policies have been and are being established concerning development on barrier islands and sensitive coastal areas, primarily floodplains and wetlands. Since wastewater treatment systems act to support and in some cases initiate development, they are important in the context of barrier island and coastal development policy.

2. Population Projections--Discrepancies between population disaggregations and projections in the 201 Facilities Plan and the 208 Areawide Water

Quality Management Plan necessitated further review by EPA. Population projections used in the 201 Facilities Plan for Southwest Escambia County and the barrier islands were considered developmental in nature and did not adequately reflect environmental concerns.

3. Viability of Septic Tanks and Percolation Ponds in Coastal Areas--Further analysis was considered necessary by EPA to determine the environmental acceptability of septic tanks and percolation ponds on barrier islands and in adjacent coastal areas.

4. Gulf Outfall--A Gulf outfall was recommended for a new Southwest Escambia Wastewater Treatment Plant proposed in the 201 Facilities Plan. Before this alternative could be accepted, additional studies were considered necessary to further evaluate the environmental impacts.

5. Land Application--Land application was recommended for a new South Santa Rosa County Wastewater Treatment Plant proposed in the 201 Facilities Plan. Further analysis was considered necessary to determine the availability of suitable land application sites in this area before this alternative could be accepted.

C. 201 Facilities Plan Summary

The 201 Facilities Plan prepared for South Escambia and Santa Rosa Counties produced the following recommendations:

- Completion of construction of the Main Street (City of Pensacola) Wastewater Treatment Plant with a design capacity of 20.0 mgd, advanced wastewater treatment, and disposal to Pensacola Bay. (This work was completed in 1979.)
- Construction of a 11.3 mgd facility to serve Southwest Escambia County, secondary treatment, and disposal via a Gulf outfall
- Construction of a 8.0 mgd facility to serve South Santa Rosa County, secondary treatment, and disposal via low-rate landspreading
- Construction of required pumping stations and force mains to provide service to the 201 planning area.

CHAPTER II - SELECTION AND DESCRIPTION OF PREFERRED ALTERNATIVES

The conveyance of flows from the Warrington, Avondale and Moreno Courts service areas to the Main Street plant is recommended. The continuation of existing wastewater management practices is recommended for all remaining areas. Alternatives selected to receive federal funds are limited to Escambia County. Funds will be made available to help connect the Avondale and Warrington treatment facilities to the Main Street plant. Both plants have been designated for closure by the Florida Department of Environmental Regulation. Funds will also be available for conveyance of Moreno Courts flows to the Main Street plant. Funds are not being made available for treatment costs but for conveyance alone. Further, funds will be available for interceptors and necessary pump stations based on existing flows.

No Action is the alternative selected for the areas outside the Avondale, Warrington and Moreno Courts service areas; Southwest Escambia, Perdido Key, Santa Rosa Island and the Gulf Breeze Peninsula. This decision is based on two major determinants. First, portions of these areas are sensitive to development due to their proximity to 100-year floodplains, wetlands or estuaries. While wastewater management options in these areas might not promote development in all situations, such options could act to support development and associated populations in sensitive areas. This would be contrary to state and federal policies and regulations that are intended to protect such areas. Second, few water quality, ecological or public health problems have been documented to date. Some areas might be able to receive funding in the future if such problems develop. Proper planning, however, should prevent these problems from developing.

The environmental advantages of the selected alternatives are based on removal of discharges from Bayou Marcus and Bayou Chico, both of which have shown evidence of water quality degradation due to the discharges. The funding decision was based on the water quality data base available and the stance of the Florida Department of Environmental Regulation, indicating that the additional wastewater added to Pensacola Bay from these discharges was preferred to continuing discharges to the bayous.

Impacts to other natural or man-made environments are anticipated to be minimal. Detrimental impacts can be mitigated in most cases. Siting and construction activities associated with conveyance lines can be mitigated, following standard procedures. Existing rights-of-way can likely be used for most conveyance lines. Some development could be supported by new interceptors, but proper planning can mitigate any potential problems resulting from such development. Current methods of sludge disposal are sufficient throughout the study area and should continue to be adequate.

Protected species and archeological resources surveys will be conducted where necessary to assure these resources are adequately protected. The Perdido Key beach mouse has been proposed for inclusion on the federal endangered species list along with its habitat designation of critical habitat by the Department of Interior. With the importance of the area as an early settlement with various periods of occupation, historical and archeological considerations must be thoroughly examined. Several areas along the barrier islands have been designated as National Seashore and other stretches have been set aside by local governments. Development contiguous to these areas should be undertaken cognizant of the value of these resources.

CHAPTER III - DRAFT EIS SUMMARY

A. Background of the Study

This EIS was initiated in 1979 by EPA Region IV to assess the 201 Facilities Plan proposed for South Escambia and Santa Rosa Counties. The 201 study began in 1975. The issues leading to the initiation of the EIS are outlined in Chapter I.

The Draft EIS is summarized in this chapter. More detailed information on the background, data and evaluation techniques leading to the decisions in the Final EIS is found in the Draft EIS which is available from EPA.

B. Wastewater Flow Projections

Wastewater flow projections are a key issue in any wastewater management study because they affect the staging, siting and capacity of wastewater management facilities. Wastewater flows were developed specifically for this EIS since population and development assumptions developed as part of the 208 Plan and incorporated into this EIS differed significantly from those used in the 201 Facilities Plan. Wastewater flows are analyzed according to existing and projected sewer service areas.

1. Sewer Service Areas

Alternatives have been developed and evaluated for this EIS based on the existing sewer service areas in Escambia and Santa Rosa Counties. Projected sewer service areas have also been developed based on projected population densities and proximity to existing service areas. The existing Escambia County service areas that will be considered as components of wastewater management systems are:

- Pensacola - The Pensacola service area is defined as the city of Pensacola plus those populated peripheral zones with collection and transportation facilities which utilize the Pensacola Main Street treatment and disposal facilities and those populated peripheral zones not currently sewered. The area is served by the Main Street plant operating at 50 percent of capacity with discharge to Pensacola Bay.

- Pen Haven - Since the inception of the EIS, this treatment facility has been phased out, with flows from the service area conveyed to the Main Street plant.

- Avondale - An existing sewered area adjacent to Pensacola currently served by a secondary treatment facility discharging to the Bayou Marcus. Wastewater flow to the plant equals its capacity. This facility is under a consent decree to close by September 1, 1985. Some flows are already being diverted to the Main Street plant.

- Warrington - An existing sewered area on the southwest fringe of Pensacola served by a secondary treatment facility with flow at 70 percent of capacity. Plant effluent discharges to Bauou Marcus Creek.

- Moreno Courts - An existing sewered area on the southwest fringe of Pensacola just south of the Warrington service area. This area is served by a secondary treatment facility operating at approximately 60 percent of capacity with discharge to percolation ponds adjacent to Bayou Marcus Creek.

- Scenic Hills - A sewered area just north of Pensacola served by a secondary treatment facility operating at 30 percent of capacity with discharge to land application.

Figure III-1 delineates the sewer service areas used for alternatives development. The northwest and southwest areas are projected sewer service areas, with Pen Haven, Avondale, Warrington, and Moreno Courts composing the central area.

Sewer service areas in Santa Rosa County are less extensive than those in Escambia County; however, wastewater management needs are projected to increase significantly by the year 2000. Santa Rosa County service areas that will be considered as components of wastewater management systems are:

- Gulf Breeze - The Gulf Breeze service area is the major service area of the Santa Rosa County portion of the study area, located on the western end of the Gulf Breeze Peninsula. This service area encompasses the incorporated area of Gulf Breeze and the adjacent unincorporated area and is served by the Gulf Breeze treatment plant operating at approximately 50 percent capacity and discharging to Santa Rosa Sound.

- Pensacola Beach - Pensacola Beach represents the only relatively densely populated service area on Santa Rosa Island. This area is served by a secondary treatment plant currently operating at capacity and discharging to Santa Rosa Sound. Although Pensacola Beach is located in Escambia County, this service area is evaluated with the Santa Rosa County service areas because of its location.

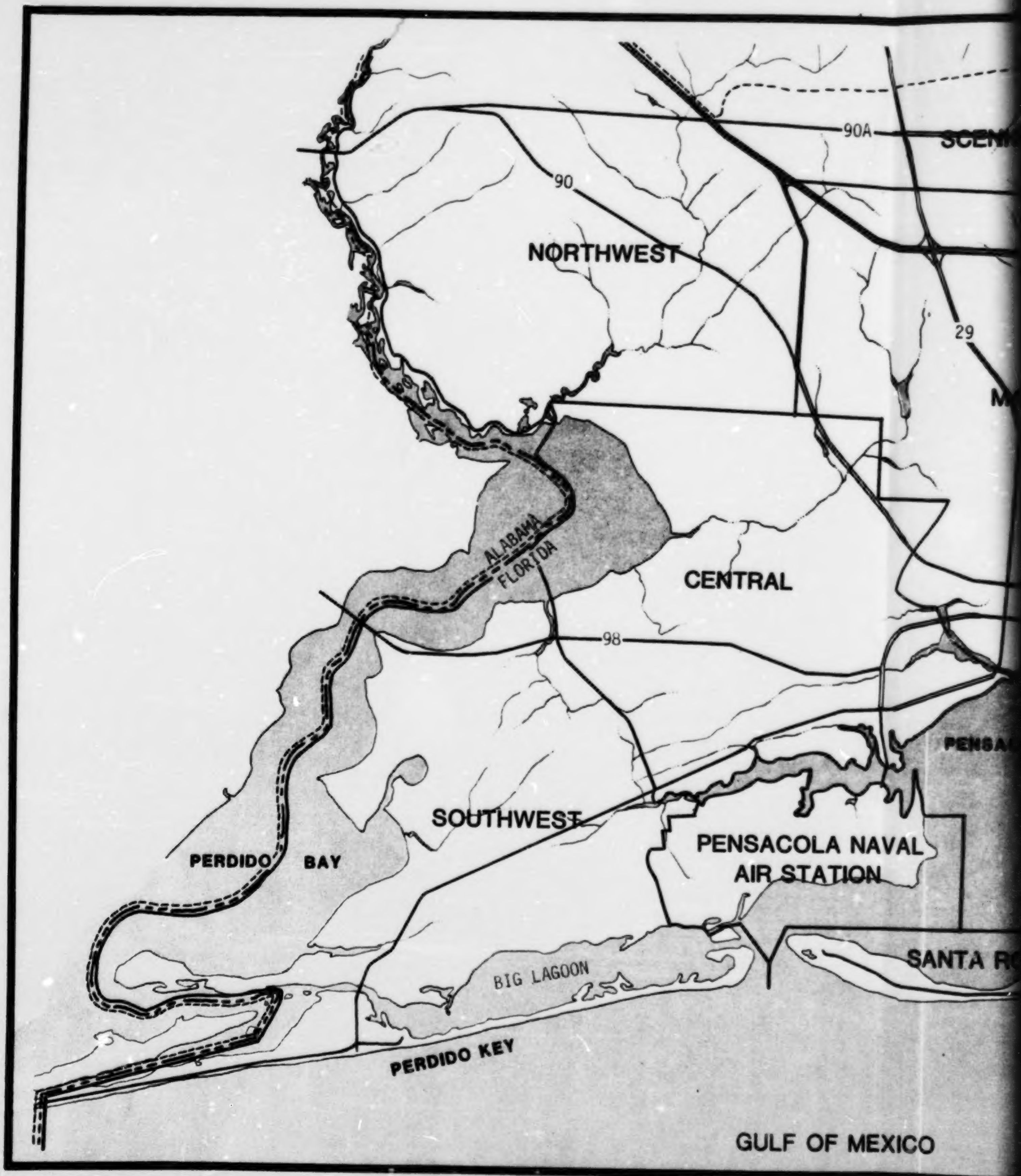
- Navarre Beach - The Navarre Beach service area is located in the eastern portion of Santa Rosa Island and is served by a secondary treatment plant discharging to Santa Rosa Sound.

- Santa Rosa Shores - The Santa Rosa Shores subdivision on the Gulf Breeze Peninsula is served by a small-scale treatment plant with spray irrigation to a local golf course.

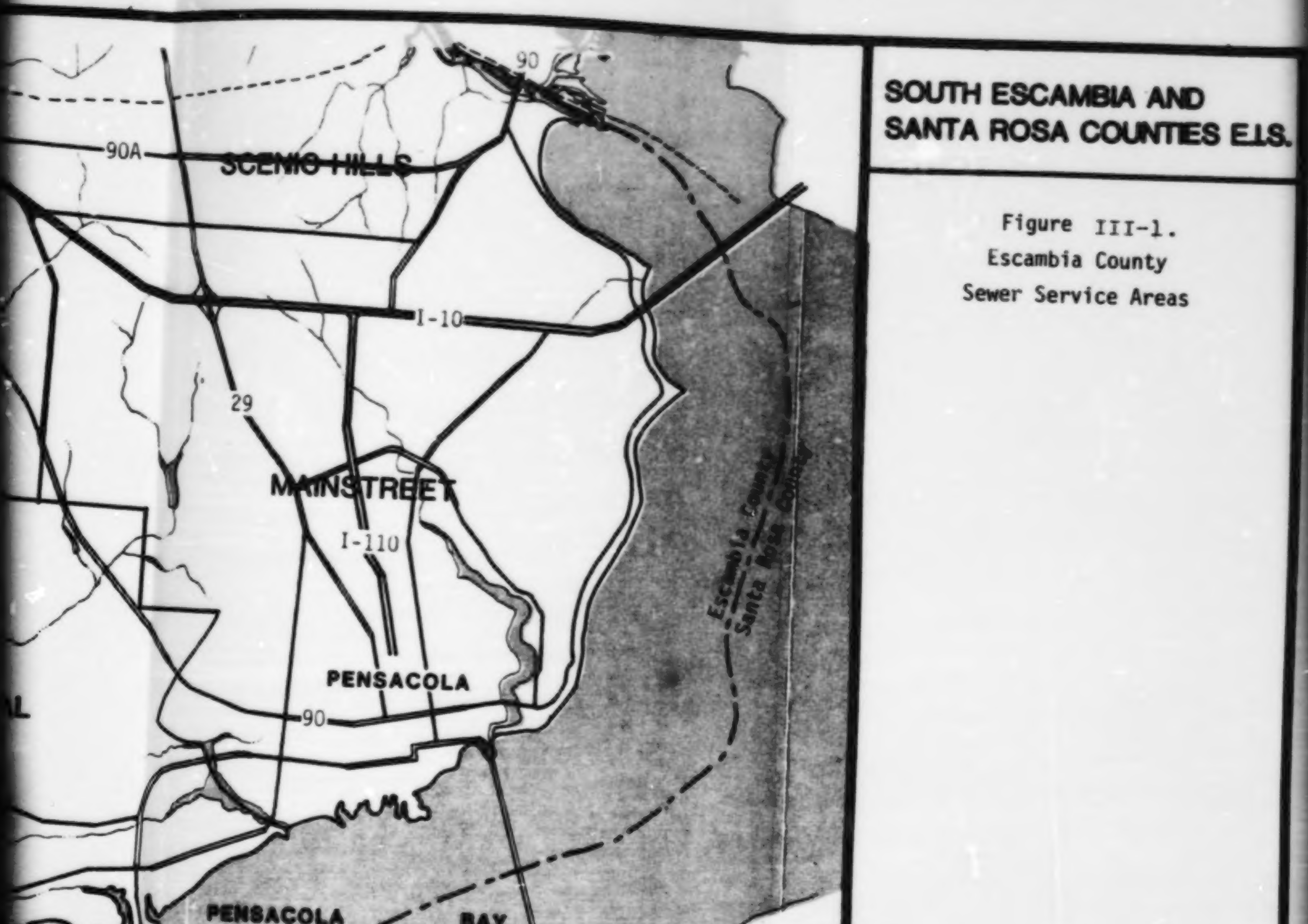
Figure III-2 delineates the sewer service areas in Santa Rosa County. Navarre Beach and Santa Rosa Shores are included in the southeast service area.

2. Land Use and Development Compatibility

An analysis of existing and future land use was conducted in relation to several environmental parameters. This analysis provided an indication of the extent of existing development in noncompatible areas (primarily floodplains and wetlands) and the ability of suitable areas to support projected development. This analysis was further used to determine the areas suitable for development with on-site wastewater management systems.


90A
SCENI
90
NORTHWEST
29
M
ALABAMA
FLORIDA
CENTRAL
98
PENSAC
SOUTHWEST
PENSACOLA NAVAL AIR STATION
PERDIDO BAY
SANTA RO
BIG LAGOON
PERDIDO KEY
GULF OF MEXICO

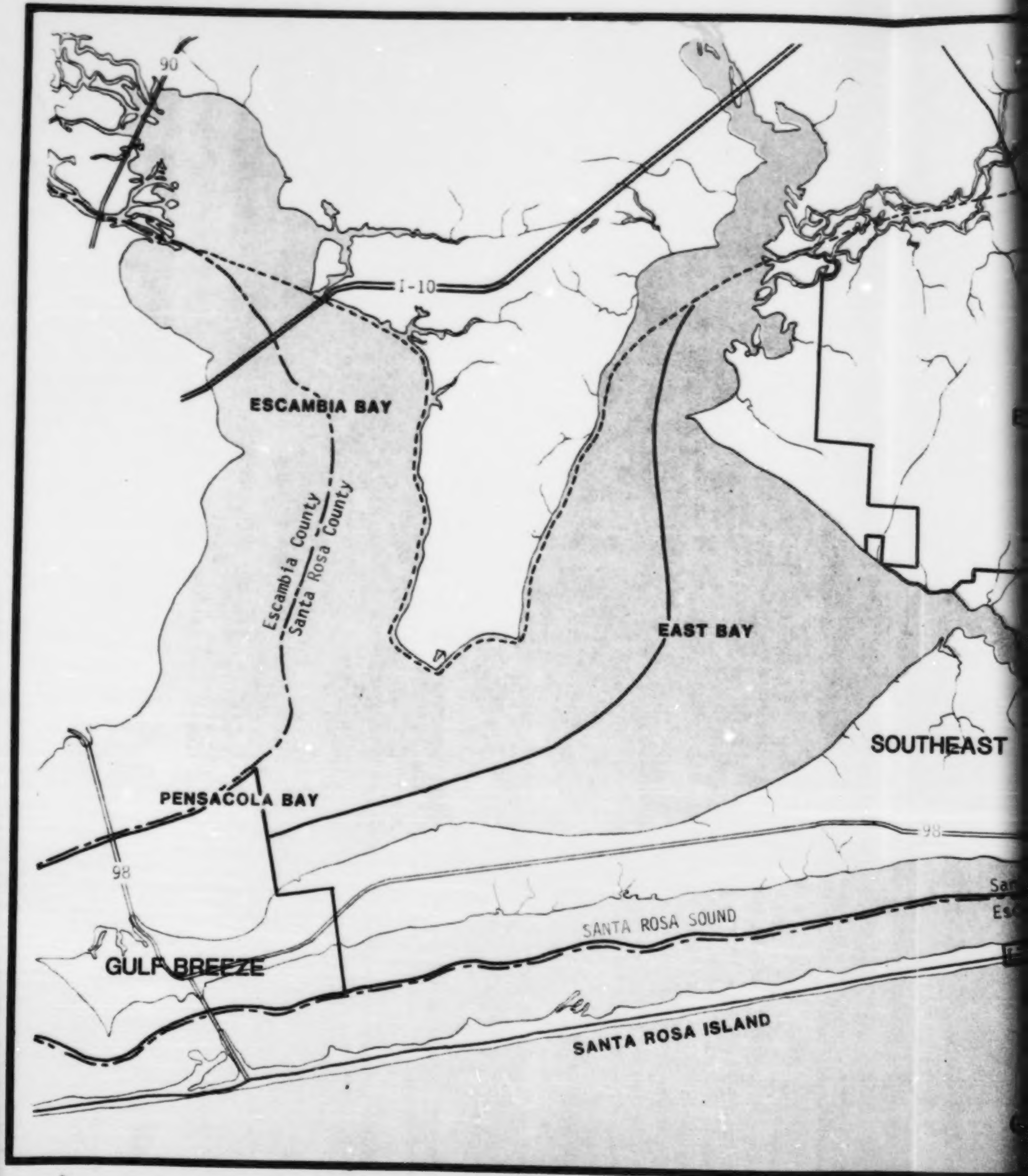
A



SOUTH ESCAMBIA AND SANTA ROSA COUNTIES E.I.S.

Figure III-1.
Escambia County
Sewer Service Areas

90
90A
SCENIC HILLS
I-10
29
MAINSTREET
I-110
PENSACOLA
90
AL
PENSACOLA
BAY
98
COLA NAVAL
STATION
SANTA ROSA SOUND
SANTA ROSA ISLAND
SANTA ROSA ISLAND
OF MEXICO
Escambia County
Santa Rosa County
1
2
N
SCALE IN MILES
0
.5
1
2
3
4


90
I-10
ESCAMBIA BAY
Escambia County
Santa Rosa County
EAST BAY
SOUTHEAST
PENSACOLA BAY
98
98
SANTA ROSA SOUND
GULF BREEZE
SANTA ROSA ISLAND

A

SOUTH ESCAMBIA AND SANTA ROSA COUNTIES E.I.S.

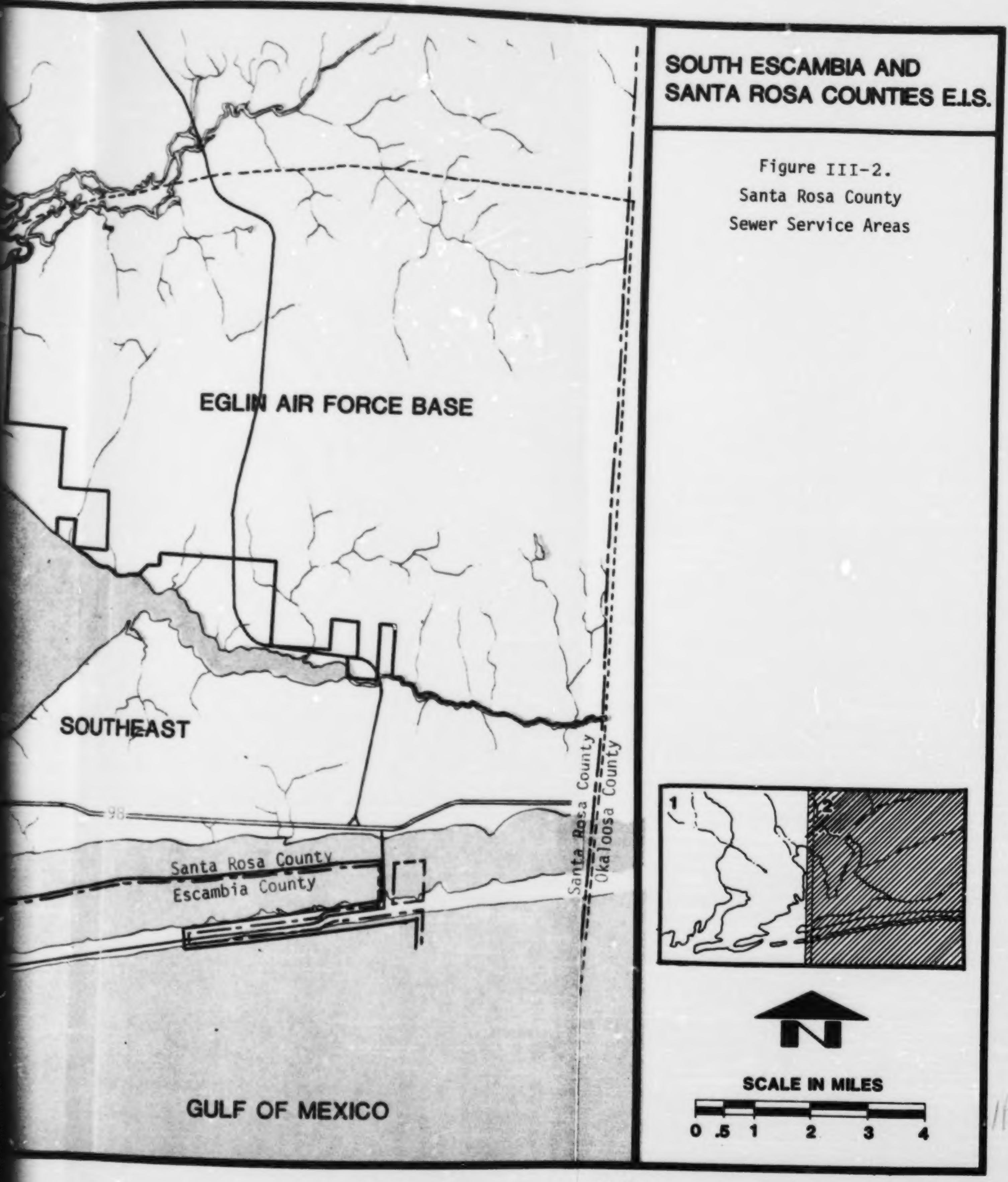

EGLIN AIR FORCE BASE
SOUTHEAST
98
Santa Rosa County
Escambia County
Santa Rosa County
Okaloosa County
GULF OF MEXICO
1
2
N
SCALE IN MILES
0
.5
1
2
3
4

Figure III-2.
Santa Rosa County
Sewer Service Areas

1P.

B

The percentage of each centroid area in a service area was estimated and applied to the centroid acreages that are suitable for on-site systems. The sum of these gave the acreage available for on-site systems in each service area. The additional (future) population that can be served by on-site systems on presently vacant land results from the following calculation:

> Acreage available x 4 houses per acre x people per household (based on 1980 census) x 0.8 (factor to allow for future commercial growth on vacant land) = carrying capacity in service area for future on-site use.

In many areas, population growth will exceed available land suitable for on-site disposal. Sufficient sewer service has been estimated for such areas in order to preclude this. Table III-1 presents the level of increased populations in service areas between 1980 and 2000 and lists the additional populations that can use on-site systems by service area. The bases for population projections are discussed below.

3. Population

Since EPA population projections are given on a county basis, a method of disaggregating the EPA projections into smaller planning or service areas was required. For this EIS, a methodology was developed based on the population disaggregations contained in the 208 Plan. The 208 population figures tend to show future growth in those areas that are most capable of supporting new growth. Locations that contain sensitive environmental areas or which pose constraints to construction (high water table, wetlands) were considered less suitable for growth. The general effect of this decision was to allocate future growth toward the northern upland portions of the counties away from the marginal lands found adjacent to the ocean and estuarine shorelines.

The disaggregation process used by the 208 program was used by this EIS, since it incorporates elements which reflect federal policies concerning development of floodplain and wetland areas. This disaggregation process will tend to underestimate population in coastal centroids only if land use planning is not instigated. Otherwise, this system represents a more judicious development pattern. In contrast, the population figures used in the 201 Plan did not account for locally planned development but extrapolated heavy development trends in the coastal area reflecting current trends on the barrier islands. In fact, however, growth is continuing on the barrier islands and in the near coastal areas. Local land use controls intended to control growth in coastal areas will still allow a population increase on Perdido Key from 3,432 to 36,710. This causes an inconsistency in actual development trends and the trends proposed by the 208 Plan for the area, which has been approved by EPA. As a result of the 208 Plan approval, funding that would induce development contrary to that delineated by the 208 Plan (which attempts to consider the location of floodplains, wetlands and other vulnerable or sensitive areas) would not be supported.

Continuing growth must be anticipated in coastal areas for secondary/vacation residences as the aesthetic values attract new seasonal residents to the area. The wastewater treatment needs of this population segment are less than the needs of permanent residents. Reduced total wastewater flows result from seasonal use patterns and reduced daily flows since tourists do not use

Table III-1. Carrying Capacity of Vacant Lands for Future On-Site Service.

Service Area	1980 Served Population	1980 Unserved Population	Total 1980 Population	Total 2000 Population	Additional Population (4-3)	Additional Population That Can be Served on Vacant Land
Main Street	70,475	67,445	137,920	176,631	38,711	35,813
Warrington	5,497	17,962	23,459	26,064	2,605	811
Pen Haven	3,746	3,121	6,867	9,294	2,427	279
Avondale	6,446	12,034	18,480	24,535	6,055	14,328
Scenic Hills	1,489	9,405	10,894	14,905	4,011	1,977
Gulf Breeze	2,768	6,460	9,228	12,421	3,193	3,068
Pensacola Beach	11,658	-0-	11,658	15,930	4,272	*
Southwest Area	-0-	6,775	6,775	11,090	4,315	18,569
Northwest Area	74	19,063	19,137	26,072	6,935	22,320
Navarre Beach	1,719	-0-	1,719	2,612	893	*
Navarre	-0-	2,156	2,156	2,387	231	19,246
Centroid 53	-0-	922	922	1,461	539	5,491
Gulf Isles	889	553	1,442	2,581	1,139	**
Santa Rosa Shores	896	-0-	896	1,560	664	*
Gulf Br. Peninsula - undesignated	-0-	328	328	355	27	**
Midway	-0-	1,310	1,310	2,387	1,077	**

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* Proposed for 100% service by utilities
**Exceeds column 5

Source: Gannett Fleming Corddry and Carpenter, Inc. 1981.

as much water as permanent residents. Seasonal development may therefore require less capital intensive wastewater treatment facilities. Reduced total wastewater flows result from seasonal use patterns and reduced daily flows since tourists do not use as much water as permanent residents. Seasonal development may therefore require less capital intensive wastewater treatment facilities than areas dominated by permanent populations. Seasonal population figures for the study area were disaggregated only for the year 2000. Seasonal population figures were derived from the 1996 seasonal population projections contained in the 201 Facilities Plan.

Reduced environmental impacts are not certain, however, unless reasonable management practices are implemented at the local level. While the 208 and EIS population figures show growth in compatible, attractive locations, this is an assumption based on a willingness to protect critical environmental areas. It may be necessary to draft and enforce local regulations which promote wise use of natural resources in order to preserve the amenities along the coastal area. Failure to do so may allow indiscriminate growth in noncompatible locations, thereby increasing populations in areas where low populations are predicted. This possibility could result in the construction of facilities in sparsely populated areas where growth fails to materialize as anticipated and could also result in a lack of adequate facilities in marginal, fragile locations.

Once the EPA population projections were disaggregated into the centroids delineated in the 208 Plan, the centroid figures were adjusted to correspond to the sewer service areas delineated in the 201 Facilities Plan. The percentage of the populated centroid area included in the 201 Plan service area was determined using a population centroid map as an overlay on the sewer service area map. A uniform density of population was assumed for each populated centroid area in order to arrive at the population in the 201 Plan service area. Then the percentage of the populated 201 Plan service area that has existing sewers was determined. This was used to arrive at the existing collection system service population. Seasonal (tourist) population that is presently served was assumed to be the same percentage of the total population as the year-round residents in each centroid. The total peak population presently served is the sum of the served year-round population plus the served seasonal population.

For purposes of determining future service capacities, additional population data computations were required. It is recognized by U.S. EPA that seasonal populations generate wastewater at a lower per capita rate than permanent populations. Consequently, a population equivalent factor of 0.8 was applied to seasonal populations for the later purpose of determining wastewater flows.

To determine future levels of served and unserved populations, the following assumptions were applied with certain exceptions. Year 2000 served populations are based on the assumptions that:

- All existing served population will continue to be served
- Fifty percent of the existing, unserved population will be connected to sewers (based on existing trends)
- Fifty percent of the population growth will be connected to sewers.

Several exceptions are made to the above assumptions. In the case of Warrington, the present strategy envisions a relatively high level of sewer service. In this situation, future served population was projected at a higher level. For the Pen Haven service area the above formula does not provide sufficient sewerage based on available, suitable soils for on-site disposal; therefore, sewer service was increased for this area. On Santa Rosa Island and Gulf Breeze Peninsula, the Pensacola Beach, Navarre Beach, and Santa Rosa Shores service areas are slated for 100 percent service in the future. The Gulf Islands National Seashore, on the other hand, has no existing or projected sewer service areas.

More detailed information concerning the methodologies used for population disaggregation and figures depicting the centroid locations and corresponding populations can be found in the Alternatives Evaluation Task Report.

4. Wastewater Flow Projections

In order to evaluate the individual wastewater management alternatives, wastewater flow projections were developed for each service area. Flow projections for the year 2000 are based on the total residential, commercial and industrial flows as well as infiltration/inflow into the systems.

Residential flows were developed by using the year 2000 equivalent peak residential population (seasonal and permanent residents) and assuming a wastewater generation rate of 80 gallons per capita per day (gpcd). Seasonal population projections were converted to permanent population by multiplying the seasonal figures by 0.8. This factor was based on the relative differences in wastewater generation between seasonal and permanent populations.

Commercial flows for the year 2000 are the sum of commercial flows for 1980 and 9 gpcd allowed for the population growth that occurs between 1980 and 2000.

Future industrial growth is projected only for the Main Street facility. Future industrial flow is represented by the existing industrial flow plus a factor of 10 percent of the residential flow growth allowed for new industry.

Infiltration/Inflow projections are based on existing I/I, 30 percent corrective measures for existing I/I and additional I/I for future systems. In the case of the existing Main Street plant service area, a lower I/I correction factor was used because the City of Pensacola has recently completed a sewer rehabilitation program. Table III-2 presents wastewater flow projections.

5. Effluent Limitations

An important element of analyzing the feasibility and impacts of various wastewater management alternatives is an evaluation of wasteload allocations or effluent limitations. The allowable pollutant loads that can be discharged from a wastewater facility are termed effluent limitations. The State of Florida establishes effluent limitations but has not been delegated authority to issue NPDES permits. Table III-3 presents the Florida DER effluent limitations for the major wastewater discharges in the study area as well as the NPDES effluent limitations established by EPA, Region IV. Since the effluent limitations established by the State are more stringent than the NPDES permit limits, they are the limits enforced.

Table III-2. Escarosa EIS - Wastewater Flow Projections (All flows in million gallons per day)

Service Areas	2000 Pop. Equivalent Served	2000 less 1980 Pop. Equiv. Served	Total Wastewater Flow	Residential Flows	Commercial Flows Exist. Major	Commercial Flows Add'l.	Commercial Flows Total	Industrial Flows Exist. Major	Industrial Flows Add'l.	Industrial Flows Total	(I/I) Exist. Major	(I/I) Add'l.	(I/I) Total
Main Street	120,793	51,788	16.37	9.66	0.56	1.09	1.65	0.19	0.41	0.60	3.68	0.78	4.46
Scenic Hills	8,097	6,619	0.9	0.648	-	0.073	0.073	-	-	0	0.08	0.099	0.179
Avondale	15,386	8,966	1.882	1.23	-	0.138	0.138	-	-	0	0.38	0.134	0.514
Pen Haven	7,429	3,698	1.016	.594	-	0.067	0.067	-	-	0	0.30	0.055	0.355
Warrington	20,226	14,735	2.943	1.62	0.60	0.182	0.782	-	-	0	0.32	0.221	0.541
Southwest Escambia Area	5,196	5,196	0.541	0.416	-	0.047	0.047	-	-	0	-	0.078	0.078
Northwest Escambia Area	12,874	12,800	1.338	1.03	-	0.116	0.116	-	-	0	-	0.192	0.192
Pensacola Beach	13,660	3,810	2.031*	1.09	-	0.123	-0.123	-	-	0	0.246	0.057	0.303
Gulf Breeze	7,405	4,719	0.797	0.592	-	0.067	0.067	-	-	0	0.067	0.071	0.138
Navarre Beach	2,298	811	0.252	0.183	-	0.020	0.020	-	-	0	0.037	0.012	0.049
Navarre	1,523	1,523	0.159	0.122	-	0.014	0.014	-	-	0	0	0.023	0.023
Centroid 53	0	0	0	0	-	0	0	-	-	0	-	0	0
Ft.Pickens & St. Park	0	0	0	0	-	0	0	-	-	0	-	0	0
Santa Rosa Shores	1,543	656	0.169	0.123	-	0.014	0.014	-	-	0	0.022	0.010	0.032
Gulf Isles	1,662	815	0.181	0.133	-	0.015	0.015	-	-	0	0.021	0.012	0.033
Midway	1,348	1,348	0.140	0.108	-	0.012	0.012	-	-	0	0	0.020	0.020
Gulf Breeze Peninsula Undesignated	281	281	0.028	0.022	-	0.002	0.002	-	-	0	0	0.004	0.004

*Adjusted to account for the influence of day visitors

Flow Projections Footnotes

Column 3 = Column 4 + 7 + 10 + 13
Column 4 = 80 gpcd x Column 1
Column 6 = 9 gpcd x Column 1
Column 7 = Column 5 + Column 6
Column 9 = 10% x Column 2 x 80 gpcd
Column 10 = Column 8 + Column 9
Column 11 = Use 25 gpcd x 1980 population equivalent for Pensacola Beach, Gulf Breeze, Navarre Beach, Santa Rosa Shores and Gulf Isles.
Column 12 = 15 gpcd x Column 2
Column 13 = Column 11 + Column 12

Table II.3 Permit Limitations for Existing Wastewater Discharges.

	NPDES					State										
		BOD$_5$		SS			BOD$_5$		SS		TN		TP		Phenol	
Facility	Capacity (mgd)	(mg/l)	(lbs/day)	(mg/l)	(lbs/day)	Capacity (mgd)	(mg/l)	(lbs/day)	(mg/l)	(lbs/day)	(mg/l)	(lbs/day)	(mg/l)	(lbs/day)	(mg/l)	(lbs/day)
Main Street	20.0	30	2250	30	2250	20.0	-	1334	-	1334	-	1000	-	168	0.05	8.3
Avondale	1.0	24	-	24	-	0.9	20	150	16	121	-	-	-	-	-	-
Warrington	2.0	10	166	10	166	1.4	10	117	10	117	7	82[1]	6	82	-	-
						1.75	10	150	10	150	7	75[1]	6	75	-	-
						2.0[2]	10	167	10	167	5	84[1]	5	84	-	-
Gulf Breeze	0.5	30	224	30	224	0.5	15	62	15	62	-	-	6	-	-	-
Pensacola Beach[3]	1.2	20	200	20	200	1.2	10	100	10	100	-	-	-	-	-	-
Navarre Beach	0.5	30	31	30	21	0.9	5	37.5	5	37.5	9	67.5	5	37.5	-	-

[1] TKN rather than TN

[2] This flow only allowable after Pen Haven discharge removed

[3] Fecal coliform limitation of 200/100 ml

C. Wastewater Management Alternatives

Wastewater management alternatives have been developed for South Escambia and Santa Rosa Counties based on existing collection, treatment and disposal facilities and projected needs. These alternatives involve varying levels of treatment and disposal options, generally less regional in scope than the 201 Facilities Plan. Alternatives were developed separately for Escambia County and Santa Rosa County due to the geographical and institutional barriers to combined alternatives.

1. Pensacola/Escambia County

Four regional concepts for wastewater management were developed and evaluated for Pensacola/Escambia County, including the 201 Facilities Plan recommendations. In addition, a local alternative with no expansion and a No Federal Action scenario were developed and evaluated. These alternatives are described in greater detail below.

a. 201 Facilities Plan

The 201 Facilities Plan proposes the use of three wastewater treatment facilities for the area:

1. The existing Main Street plant would serve the Pensacola franchise area. It would discharge AWT level effluent to Pensacola Bay.
2. The existing Scenic Hills plant would serve the Scenic Hills area. Secondary level effluent would be disposed of by land application.
3. A new, phased construction 11.3 mgd southwest plant, with secondary level effluent disposed by a Gulf outfall, would receive wastewater flow from all of southwestern Escambia County, Perdido Key, and the present service areas of Avondale, Pen Haven and Warrington. The existing facilities of the latter three communities would be gradually phased out.

b. Regional Alternative I

The Main Street facility presently has the capacity to treat 20 mgd at an AWT level. With a decrease in treatment level, the capacity of the facility could be increased. Alternatively, with acquisition of adjacent land, the facility could be expanded and continue treatment at an AWT level. Two facilities are proposed under Regional Alternative I. These are:

1. Main Street facility expanded to serve Pensacola and all areas except Scenic Hills with treatment/disposal options of
   - Advanced wastewater treatment and discharge to Pensacola Bay
   - Advanced secondary treatment and discharge to Pensacola Bay
   - Secondary treatment with discharge by Gulf outfall
2. Scenic Hills facility continuing to operate at secondary level of treatment with disposal by land application.

c. Regional Alternative II

A variation of Regional Alternative I, this alternative will evaluate the use of existing smaller treatment plants to treat the volume of wastewater which cannot be handled at the Main Street plant without expansion. Priority for use of existing facilities in this scheme will be established on the basis of the following criteria:

- o Physical condition of the facility
- o Quality of effluent in context of the environmental impact on the receiving stream
- o Proximity to service area needs
- o Capacity.

Three facilities are proposed under Regional Alternative II. These are:

1. Main Street facility operating at capacity to serve all areas except Scenic Hills with treatment/disposal options of
   - Advanced wastewater treatment and discharge to Pensacola Bay
   - Advanced secondary treatment and discharge to Pensacola Bay
   - Secondary treatment with discharge by Gulf outfall

2. Scenic Hills facility continuing to operate at secondary level of treatment with disposal by land application
3. Avondale facility expanded to serve the remaining areas not served by Main Street facility with treatment/disposal options of
   - Secondary treatment with disposal by land application
   - Advanced secondary treatment with surface water discharge
   - Advanced secondary treatment with deep-well injection.

d. Regional Alternative III

This alternative is similar to Alternative I and II. It includes, however, a subregional treatment and disposal facility to serve Southwest Escambia County and Perdido Key rather than conveyance facilities to the Main Street facility for these areas. Thus the cost effectiveness of treatment and disposal for the southwest area versus conveyance to the Main Street facility is evaluated.

Three facilities are proposed under Regional Alternative III. These are:

1. Main Street facility expanded to serve Pensacola and all areas except Scenic Hills and southwest with treatment/disposal options of
   - Advanced wastewater treatment and discharge to Pensacola Bay
   - Advanced secondary treatment and discharge to Pensacola Bay
   - Secondary treatment with discharge by Gulf outfall

2. Scenic Hills facility continuing to operate at secondary level of treatment with disposal by land application

3. New southwest facility built to serve Southwest Escambia County with treatment/disposal options of
   - Secondary treatment with disposal by land application
   - Advanced secondary treatment with discharge to Perdido Bay
   - Advanced secondary treatment with discharge by deep-well injection.

e. Local Alternative with No Expansion

Under this alternative the existing treatment facilities would not be expanded and would resemble various elements of Regional Alternatives I or II.

Four facilities are proposed under the Local Alternative. These are:

1. Main Street facility operating to capacity (20 mgd) to serve the Pensacola franchise area and receive surplus flows from other areas in the county, with treatment/disposal options of
   - Advanced wastewater treatment and discharge to Pensacola Bay
   - Advanced secondary treatment and discharge to Pensacola Bay
   - Secondary treatment with discharge by Gulf outfall

2. Scenic Hills facility continuing to operate at secondary level of treatment with disposal by land application

3. Avondale facility continuing to operate at capacity with treatment/disposal options of
   - Secondary treatment with disposal by land application
   - Advanced secondary treatment with discharge to Perdido Bay
   - Advanced secondary treatment with deep-well injection

4. Warrington facility continuing to operate at secondary level of treatment with disposal by land application

5. On-site and small community systems continued for Southwest Escambia County area.

f. No Action

The No Action Alternative is a scenario in which current wastewater management practices would continue.

Until 1981, the wastewater management needs over most of the area were provided by the City of Pensacola and the Escambia County Utility Department. These two entities owned and operated multiple wastewater treatment plants and collection systems. Although they were separate governmental units, they cooperated in providing wastewater service with portions of the county contributing flows to the city's treatment plants. In 1981, in order to further their ability to serve the wastewater (and water) needs of the area, the city and county formed the Escambia County Utilities Authority that is responsible for all wastewater management needs in Escambia County, except Santa Rosa Island, which has a separate Authority.

Based on this background, it is concluded that in the event of no federal action, the wastewater needs of the area would be responsively served by the new Authority. However, the lack of federal funds could reduce the feasibility accomplishing needed capital improvements on existing facilities.

Under the No Action Alternative, the Main Street wastewater treatment plant would be used to maximum capacity through increased service needs and through closing of the Pen Haven, Avondale, Moreno Courts, and Warrington treatment plants. In fact, flows from the Pen Haven plant (closed prior to October 1, 1983) and a portion of the Avondale flows are already conveyed to the Main Street plant. Moreno Courts discharges to percolation ponds; hence they have removed their discharge to Bayou Chico. Wastewater service would be extended to the northwest area of the study area with treatment at the Main Street facility as development dictates. The Scenic Hills plant would continue to operate, as in the case of the other management alternatives. The southwest area will most likely be served through on-site systems and small package plants funded by private developers. The Avondale and Warrington plants cannot continue under existing conditions since Florida DER has determined these discharges must be eliminated.

This scenario is essentially the same as Regional Alternative III except for the method of serving the southwest area and the probable phasing in constructing certain wastewater facilities.

Table III-14 summarizes the treatment and disposal options associated with each wastewater management alternative for Pensacola/Escambia County. Table III-5 indicates the costs associated with each alternative.

2. Santa Rosa Island/Gulf Breeze Peninsula

Four regional concepts for wastewater management were also developed for Santa Rosa Island/Gulf Breeze Peninsula, including the 201 Facilities Plan recommendations. In addition, two subregional alternatives, a local alternative, and a No Federal Action scenario were developed and evaluated. These alternatives are described in greater detail below.

a. 201 Facilities Plan

The 201 Facilities Plan for the Gulf Breeze Peninsula and Santa Rosa Island has several major components:

1. Wastewater collection and conveyance from Gulf Breeze and Pensacola Beach via a force main east along U. S. Highway 98 to the regional treatment facility in South Santa Rosa County
2. Wasteflows from Santa Rosa Shores, Woodlawn Beach and Navarre Beach would be connected via small force mains into the major force main for conveyance to the regional facility
3. The regional facility would treat wastewater to the secondary level with disposal of effluent by land application at a site adjacent to Eglin Air Force Base on the peninsula (proposed site indicated in the 201 Facilities Plan is not available).

b. Regional Alternative I

Regional Alternative I has three major components that vary from the concept presented in the 201 Facilities Plan. It has been determined through investigations during the EIS that land application from a regional facility to a site on Eglin Air Force Base is not viable due to the unavailability of land. Consequently, the following regional concept is proposed:

1. Conveyance of wastewater flows from Gulf Breeze, Pensacola Beach, Santa Rosa Shores, Gulf Isles, and western Gulf Breeze Peninsula to Main Street facility with treatment/disposal options of

Table III-4. Summary of Alternatives.

Escambia County

Structural Alternative	Treatment Level/Disposal Location
1. 201 Facility Plan	
a. Pensacola - Main Street WWTP	- AWT - Pensacola Bay
b. Scenic Hills - Scenic Hills WWTP	- secondary - Land Application
c. All other areas - Southwest WWTP	- secondary - Gulf Outfall
2. Regional Alternative I	
a. Pensacola and all areas except Scenic Hills - Expanded Main Street WWTP	- AWT - Pensacola Bay - advanced secondary - Pensacola Bay - secondary - Gulf Outfall
b. Scenic Hills - Scenic Hills WWTP	- secondary - Land Application
3. Regional Alternative II	
a. Pensacola and all areas except Scenic Hills - Main Street WWTP to operational capacity	- AWT - Pensacola Bay - advanced secondary - Pensacola Bay - secondary - Gulf Outfall
b. Scenic Hills - Scenic Hills WWTP	- secondary - Land Application
c. Avondale and areas not served by Main Street and Scenic Hills - Avondale STP	- secondary - Land Application - advanced secondary - Perdido Bay discharge - advanced secondary - Deep well injection
4. Regional Alternative III	
a. Pensacola and all areas except Scenic Hills and Southwest - Main Street WWTP	- AWT - Pensacola Bay - advanced secondary - Pensacola Bay - secondary - Gulf Outfall
b. Scenic Hills - Scenic Hills WWTP	- secondary - Land Application
c. Southwest - New Southwest WWTP	- secondary - Land Application - advanced secondary - Perdido Bay discharge - advanced secondary - Deep well injection
5. Local Alternatives with no expansion	
a. Pensacola - Pen Haven; areas not served by Avondale, Warrington and Scenic Hills - Main Street WWTP	- AWT - Pensacola Bay - advanced secondary - Pensacola Bay - secondary - Gulf Outfall

Table III-4. Continued

Escambia County

Structural Alternative	Treatment Level/Disposal Location
b. Scenic Hills - Scenic Hills WWTP	- secondary - Land Application
c. Avondale - Avondale WWTP	- secondary - Land Application - advanced secondary - Perdido Bay discharge - advanced secondary - Deep well injection
d. Warrington - Existing WWTP	- secondary - Land Application
e. Southwest	- individual on-lot and small community systems
6. No Action	- same as Regional Alternative III except that the Southwest area will be served by individual on-lot and small community systems, and implementation may be phased.

Source: Gannett Fleming Corddry and Carpenter, Inc. 1981.

Table III-5. Wastewater Conveyance Facilities for Escambia County Capital and Operating Costs and Present Worths (Thousands of Dollars)

	Capital Cost	Annual Operating Cost	Present Worth
201 Plan	48,648*	280	38,484
Regional Alternative I	11,848	237	11,881
Regional Alternative II	13,433	243	13,208
Regional Alternative III **			
(a)	8,782	175	8,921
(b)	5,433	131	5,716
Local Alternative	8,434	98	6,370
No Action	2,873	51	2,878

*Costs for the 201 Plan included a Gulf outfall for a proposed Southwest Escambia wastewater facility. A minimum depth of 30 feet was used for location of discharge ports. The 30 foot depth was based on other outfall studies conducted in the Gulf. This required an outfall of approximately 10,000 feet in length. If this alternative was considered further, detailed examination of current patterns, reef locations, and impacts to beaches and marine grassbeds would be required to determine the minimum outfall length.

**(a) - Disposal of effluent from proposed southwest plant to Perdido Bay.
(b) - Disposal of effluent from proposed southwest plant via spray irrigation.

Note: Conveyance costs for Avondale and Warrington are based on data provided by the Escambia County Utilities Authority.

Source: Gannett Fleming Corddry and Carpenter, Inc. 1981.

- Secondary treatment with discharge to Pensacola Bay
- Advanced secondary treatment with existing discharge to Pensacola Bay
- Secondary treatment with Gulf outfall

2. Continuance of Navarre Beach facility to capacity with treatment/disposal options of
   - Secondary treatment with existing discharge to Santa Rosa Sound
   - Advanced secondary treatment with existing discharge to Santa Rosa Sound
   - Secondary treatment with disposal by land application

3. Continuance of on-site and small community systems for Navarre and eastern Gulf Breeze Peninsula.

c. Regional Alternative II

Regional Alternative II will evaluate the treatment and discharge options for a regional Gulf Breeze treatment plant and the existing Navarre Beach treatment plant while continuing the on-site and small community systems for other areas. The following regional concept is proposed:

1. Conveyance of wastewater flows from Gulf Breeze, Pensacola Beach, Santa Rosa Shores, Gulf Isles, and western Gulf Breeze Peninsula to Gulf Breeze facility with treatment/disposal options of
   - Secondary treatment with land application
   - Advanced secondary treatment with existing discharge to Santa Rosa Sound
   - Secondary treatment with existing discharge to Santa Rosa Sound
   - Secondary treatment with discharge to Pensacola Bay

Areas outside this regional system would be handled as in Regional Alternative I:

2. Continuance of Navarre Beach facility to capacity with treatment/disposal options of
   - Secondary treatment with existing discharge to Santa Rosa Sound
   - Advanced secondary treatment with existing discharge to Santa Rosa Sound
   - Secondary treatment with disposal by land application

3. Continuance of on-site and small community systems for Navarre and eastern Gulf Breeze Peninsula.

d. Regional Alternative III

Regional Alternative III will evaluate the treatment and discharge options for a new regional eastern Gulf Breeze treatment plant and the existing Navarre Beach treatment plant while continuing the on-site and small community systems. The following regional concept is proposed:

1. Conveyance of wastewater flows from Gulf Breeze, Pensacola Beach, Santa Rosa Shores, Gulf Isles, and western Gulf Breeze Peninsula to

a new Eastern Gulf Breeze facility with
- Secondary treatment with new discharge to Pensacola Bay
- Secondary treatment with land application

Areas outside this regional system would be handled as in Regional Alternative I

2. Continuance of Navarre Beach facility to capacity with treatment/disposal options of
   - Secondary treatment with existing discharge to Santa Rosa Sound
   - Advanced secondary treatment with existing discharge to Santa Rosa Sound
   - Secondary treatment with disposal by land application

3. Continuance of on-site and small community systems for Navarre and eastern Gulf Breeze Peninsula.

e. Subregional Alternative I

Subregional Alternative I will combine Gulf Breeze and Pensacola Beach into a single treatment facility. The remaining areas of the Gulf Breeze Peninsula and Santa Rosa Island will be assumed to be too sparsely populated, with population centers too far apart to warrant combination of facilities. The following subregional concept is proposed:

1. Conveyance of wastewater flows from Gulf Breeze and Pensacola Beach to the Main Street facility with
   - Secondary treatment with land application
   - Advanced secondary treatment with discharge to Pensacola Bay
   - Secondary treatment with discharge to Pensacola Bay
   - Secondary treatment with Gulf outfall

2. Continuance of existing Santa Rosa Shores facility at secondary level of treatment with disposal by land application

3. Continuance of existing Gulf Isles facility at secondary level of treatment with discharge to percolation pond

4. Continuance of existing Navarre Beach facility with treatment/disposal options of
   - Secondary treatment with existing discharge to Santa Rosa Sound
   - Advanced secondary treatment with existing discharge to Santa Rosa Sound
   - Secondary treatment with disposal by land application

5. Continuance of on-site and small community systems for Navarre and eastern and western Gulf Breeze Peninsula.

f. Subregional Alternative II

Subregional Alternative II will evaluate the treatment and discharge options for an expanded Gulf Breeze WWTP and the existing Navarre Beach WWTP while continuing the operation of small existing WWTPs and on-site systems.

The following subregional concept is proposed:

1. Conveyance of wastewater flows from Gulf Breeze and Pensacola Beach to the Gulf Breeze facility with treatment/disposal options of
    - Advanced secondary treatment with existing discharge to Santa Rosa Sound
    - Secondary treatment with existing discharge to Santa Rosa Sound
    - Secondary treatment with discharge to Pensacola Bay.

Areas outside this subregional service area would be handled as in Subregional Alternative I.

2. Continuance of Navarre Beach facility to capacity with treatment/disposal options of
    - Secondary treatment with existing discharge to Santa Rosa Sound
    - Advanced secondary treatment with existing discharge to Santa Rosa Sound
    - Secondary treatment with disposal by land application
3. Continuance of on-site and small community systems for Navarre and eastern Gulf Breeze Peninsula.

g. Local Alternative with No Expansion

Five facilities are proposed under this alternative. These are:

1. Continuance of Gulf Breeze facility at secondary level of treatment with existing discharge to Santa Rosa Sound
2. Continuance of Pensacola Beach facility with treatment/disposal options of
    - Secondary treatment with existing discharge to Santa Rosa Sound
    - Advanced secondary treatment with existing discharge to Santa Rosa Sound
3. Continuance of Santa Rosa Shores facility at secondary level of treatment with disposal by land application
4. Continuance of Gulf Isles facility at secondary level of treatment with discharge to percolation pond
5. Continuance of existing Navarre Beach facility with treatment/disposal options of
    - Secondary treatment with existing discharge to Santa Rosa Sound
    - Advanced secondary treatment with existing discharge to Santa Rosa Sound
    - Secondary treatment with disposal by land application
6. Continuance of on-site and small community systems for Navarre and eastern and western Gulf Breeze Peninsula.

h. No Action

The No Action Alternative is one in which current wastewater management practices would continue. Wastewater service in Santa Rosa Island and the Gulf Breeze Peninsula has been provided in several independent and self-sufficient modes:

- Public institutions - City of Gulf Breeze, Santa Rosa Island Authority (Pensacola Beach), and the Santa Rosa County Beach Administration (Navarre Beach)
- Private institutions - Gulf Isles and Santa Rosa Shores
- Individual on-site systems - most of the eastern Gulf Breeze Peninsula.

Currently, independent of other planning efforts, the Santa Rosa Island Authority is undertaking an engineering study for expansion of the Pensacola Beach wastewater treatment plant in response to service needs in that community.

It is expected that in the absence of federal funding the current practice of independently serving each local community would continue. This scenario would essentially be the same as the Local Alternative. However, without federal funding the existing treatment plant discharges into Santa Rosa Sound would probably continue without change at Navarre Beach and possibly Pensacola Beach. This would require local expenditure of funds to meet any increased FDER permit requirements.

Table III-6 summarizes the treatment and disposal options associated with each wastewater management alternative for Santa Rosa Island/Gulf Breeze Peninsula. Table III-7 indicates the costs associated with each alternative.

D. Existing Natural Environment

1. Freshwater Resources

Freshwater resources in the study area may be potentially impacted by the disposal of treated wastewater and by increased development, leading to alteration of existing drainage patterns. In a coastal area such as South Escambia and Santa Rosa Counties, freshwater resources also play an integral role in the estuarine systems and in the formation of environmentally sensitive floodplains and wetlands.

a. Hydrology

Freshwater hydrology in the study area is dominated by four major river basins that drain into the Perdido and Pensacola Bay systems. These are the Perdido, Escambia, Blackwater and Yellow River basins. Additionally, there is some localized, coastal drainage. This includes the East Bay River, draining into Escambia Bay, as well as overland flow from the Gulf Breeze Peninsula, Perdido Key, Garcon Peninsula, and the eastern portion of the Pensacola Peninsula.

Table III-6. Summary of Alternatives.

Santa Rosa Island/Gulf Breeze Peninsula

Structural Alternatives	Treatment Level/Disposal Location
1. 201 Facility Plan - All areas, regional WWTP	- secondary - Land Application
2. Regional Alternatives	
a. Gulf Breeze, Pensacola Beach, Santa Rosa Shores Gulf Isles, and Western Gulf Breeze Peninsula - regional WWTP at Gulf Breeze or eastern peninsula	- Convey to advanced secondary Main St. WWTP - Pensacola Bay - secondary - present discharge, Santa Rosa Sound - secondary - land application - advanced secondary - present discharge, Santa Rosa Sound - secondary - Pensacola Bay discharge
b. Navarre Beach - Existing WWTP	- secondary - present discharge, Santa Rosa Sound - advanced secondary - present discharge, Santa Rosa Sound - secondary - land application
c. Navarre, Eastern Gulf Breeze Peninsula	- on-site, small community systems
3. Subregional Alternatives	
a. Gulf Breeze and Pensacola Beach - subregional WWTP at Gulf Breeze	- convey to advanced secondary Main St. WWTP - Pensacola Bay - secondary - land application - secondary - Santa Rosa Sound - advanced secondary - present discharge, Santa Rosa Sound - secondary - Pensacola Bay
b. Santa Rosa Shores - Existing WWTP	- secondary - land application
c. Gulf Isles - Existing WWTP	- secondary - percolation pond
d. Navarre Beach	- secondary - present discharge, Santa Rosa Sound - advanced secondary - present discharge, Santa Rosa Sound - secondary - land application
e. Navarre, Eastern Gulf Breeze Peninsula, and Western Gulf Breeze Peninsula	- on-site, small community systems
4. Local Alternative	
a. Gulf Breeze - Gulf Breeze WWTP	- secondary - present discharge, Santa Rosa Sound - advanced secondary - present discharge, Santa Rosa Sound - secondary - Pensacola Bay

Table III-6. Continued

Santa Rosa Island/Gulf Breeze Peninsula

Structural Alternatives	Treatment Level/Disposal Location
4. Local Alternative	
a. Gulf Breeze - Gulf Breeze WWTP	- secondary - present discharge, Santa Rosa Sound - advanced secondary - present discharge, Santa Rosa Sound - secondary - Pensacola Bay
b. Pensacola Beach - Pensacola Beach WWTP	- secondary - present and new discharge point, Santa Rosa Sound - advanced secondary - present and new discharge point, Santa Rosa Sound
c. Santa Rosa Shores	- secondary - land application
d. Gulf Isles	- secondary - percolation pond
e. Navarre Beach	- secondary - present discharge, Santa Rosa Sound - advanced secondary - present discharge, Santa Rosa Sound - secondary - land application
f. Navarre and Eastern Gulf Breeze Peninsula and Western Gulf Breeze Peninsula	- on-site, small community systems
5. No Action	- same as local alternative except that all facilities will discharge to present location

Source: Gannett Fleming Corddry and Carpenter, Inc. 1981.

Table III-7. Wastewater Conveyance Facilities for Santa Rosa County Capital and Operating Costs and Present Worths (Thousands of Dollars)

	Capital Cost	Annual Operating Cost	Present Worth
201 Plan	16,765	200	13,813
Regional Alternative (1)			
(I)	13,367	178	12,723
(II)	6,715	118	6,702
(III)	13,392	175	12,779
Subregional Alternative (2)			
(I)	3,298	52	3,078
(II)	9,539	106	8,668
Local Alternative	629	9	603
No Action	629	9	603

(1) I - Treatment at Main Street
II - Treatment at existing Gulf Breeze plant site
III - Treatment at eastern Gulf Breeze Peninsula plant site

(2) I - Treatment at existing Gulf Breeze plant site.
II - Treatment at Main Street.

Source: Gannett Fleming Corddry and Carpenter, Inc. 1981.

b. Quality

Recent trends indicate an enhancement in water quality of the rivers entering the Pensacola Bay system. However, substantial improvement will be required before all Class III water quality standards are met. This is especially true in the case of coliform bacterial counts, which must be substantially lowered to make these waters safe for water contact sports. Historically the major source of pollution to the bay systems in the study area has been industrial discharges. In some bayous as well, industrial discharges have been responsible for degraded water quality. Water quality has generally improved but continued discharges and releases from sludge accumulated from previous discharge practices have left the bays and bayous sensitive to pollutants. General conclusions to be drawn from water quality data of the tributaries draining into the Pensacola Bay system are:

1. Dissolved oxygen levels meet or exceed state criteria at sampling stations throughout the freshwater drainage basin of the Pensacola Bay system.

2. Where comparisons are available, average nutrient values seem to have decreased substantially since the 1960's and 1970's. These decreases become less obvious as one moves down river. The values fall well within freshwater water quality screening criteria established by FDER for Class III waters in all tributaries into the Pensacola Bay system.

3. While concentrations of these nutrients are low, the loading of these parameters and other pollutants into the receiving estuarine environment causes concern. The build-up of these pollutants in the bottom muds of the system within the EIS study area can have long term, adverse impacts on estuarine water quality.

4. Violations of heavy metal criteria exist in stretches of the Escambia River and the Yellow River.

5. Violations of Class III water criteria continue to occur for total coliform bacteria in the Escambia River, Blackwater River and Yellow River, making these waters unsafe for contact sports.

6. There is a gradual decrease in macroinvertebrate community health moving downstream and accelerating as one approaches the estuarine environment. This is attributable to the stressful conditions of the interfacing fresh/saltwater environment as the river systems enter the estuaries, to pollution from increasing municipal and industrial discharges, and to concentrations of urban populations.

c. Ecology

The quality of the water and the abundance of general habitat types can be expected to determine the types of aquatic communities that exist in the study area. In general, the freshwater aquatic communities that exist in the Perdido River, Escambia River, Big Coldwater Creek, Blackwater River, Eleven Mile Creek, Eight Mile Creek, and Marcus Bayou Creek are in good condition. Some degradation from nonpoint source run-off and industrial and urban development has occurred, but the types of aquatic insects and fish found are fairly typical of blackwater systems (Ross and Jones 1979, Gunning pers. comm.).

2. Estuarine Resources

The estuarine resources of the South Escambia and Santa Rosa Counties study area constitute a complex system impacted by freshwater inflow, nonpoint runoff, and tidal currents. The area's estuaries play an important role in the life-cycle of many aquatic and terrestrial organisms and are also an important component of the area's recreation and tourist industries. Since the area's estuaries are also used for wastewater discharges and proposed alternatives may result in increased or relocated discharges, a thorough analysis of the estuarine resources is a necessary basis for the evaluation of existing and potential impacts.

a. Hydrodynamics

Circulation in the estuaries of Escambia and Santa Rosa Counties depends on numerous factors including river flow, tides, and wind. The circulation patterns of the Perdido and Pensacola Bay systems vary from two-layer flow with stratification to two-layer flow with vertical mixing (USEPA 1975, 201 Supplement 1978). The mean water transport in these bays is in a seaward direction for the upper layer and riverward in the lower layer. Under most conditions these systems show stratification, with little if any mixing. The result is that the flushing rate for these estuarine bays can be extremely low (200 days when river inflow is at ten-year low of 61 m^3/sec) (USEPA 1975). Local wind patterns can cause a current reversal to occur in these bays causing the upper layer to flow riverward and the lower layer seaward. The result of these reversals is that pollution sources are trapped in the estuaries for longer periods of time.

b. Quality

Even with great expenditures of funds to control point source pollution in the early 1970's, water quality in the Pensacola Bay system, though showing some improvement, is far from pristine. Nutrient concentrations continue to exceed established water quality screening criteria and, in some instances, show signs of increasing. The Pensacola Bay system remains in excess of its assimilative capacity for these nutrients. Dissolved oxygen concentrations in bottom waters continue to violate Florida water quality criteria of 4.0 mg/l (33.4 lb/mgal) during the saline-stratified conditions of the summer and early fall. This is attributed primarily to the residual effects from the buildup of organic materials in the bottom muds that require oxygen upon their decomposition. Secondary impacts from anaerobic conditions in the bottom waters may include the increased release of nutrients into the water column, stressed conditions for macroinvertebrate and dimersal (bottom) fish populations, and the buildup of toxic hydrogen sulfide in bottom muds.

Current water quality in Perdido Bay remains about the same as it was in the early 1970's. Based on limited information, no major trends were identified that indicated violations of water quality criteria. Macroinvertebrate community diversity is low for a Florida estuary and, most importantly, commercial shrimp landings have not been recorded for this area since 1975. Most of the total nitrogen and BOD_5 loading into Perdido Bay enters via the Perdido River and originates from point and nonpoint source pollution. Most of the total phosphorus loading into Perdido Bay originates from point sources within the immediate drainage areas of the bay.

c. Ecology

The type of estuarine communities found in the Escambia-Santa Rosa County EIS study area are dependent mostly on water quality and the general abundance of habitat types. The communities that exist in the estuaries of Perdido Bay, Pensacola Bay, East Bay, and Escambia Bay indicate a wide range in physical and environmental conditions. Numerous factors (e.g., salinity, toxic wastes, and point and nonpoint pollution sources) determine the quality and type of community that can be found in estuaries. The estuaries in the EIS study area are represented by communities which are in an intermediate stage between natural undisturbed systems and those that are polluted, which show the characteristic degradation in normal production of shellfish and finfish.

3. Marine Resources

The hydrodynamics, water quality and ecology of the Gulf waters are related to the estuarine resources and have an important bearing on the proposed Gulf outfall. For these reasons, a thorough analysis of the study area's marine resources is essential for the complete evaluation of potential environmental impacts.

a. Hydrodynamics

Marine hydrodynamics are represented by a complex network of current loop patterns which are in a state of constant change due to numerous factors (Smith 1974). The main loop currents located in the offshore area of Escambia and Santa Rosa Counties are the Mississippi-Alabama Shelf Loop, the West Florida Loop, and the Gulf Loop. Each of these current loop patterns will either reinforce the others or create a zone of transition with little or no movement (Smith 1974, Jones et al 1973). The West Florida Loop and the Mississippi-Alabama Loop are responsible for the longshore drift in a westerly direction along the barrier islands of Escambia and Santa Rosa Counties (Jones et al. 1973). In the area where these two current loops meet, an eddy loop is created since these loops are in direct opposition (Mississippi-Alabama current inshore and West Florida current offshore) to each other. This relationship and resulting transition zone and eddy current change during the year. In the deeper offshore Gulf area, the Gulf Current Loop operates and serves to reinforce these nearshore current patterns. This offshore Gulf Loop also exhibits seasonal characteristics.

b. Quality

Significant data gaps exist in our understanding of the current state of water quality of the Gulf of Mexico adjacent to the study area. The most comprehensive study took place in August and September 1971. This study, conducted by Florida State University and the Florida Coastal Coordination Council, provides most of the available information for this region. The results of analyses from investigations of trace element distribution, pesticide distribution, sedimentary parameters and wind/water dynamics, however, have led to the conclusion that the principal measured effects in the Florida territorial sea off the study area coast are the result of a major influence outside the study area and to the west. The most likely source is considered to be Mobile Bay. Additional contributions appear to be from the Mississippi River delta and the Perdido and Escambia River systems.

c. Ecology

The type of marine communities that can be expected offshore Escambia and Santa Rosa Counties are dependent mostly on the sediment type, season, and general water quality. In general, offshore marine systems are more diverse, in terms of invertebrate and fish species, than the estuarine systems. However, while species diversity is high, the relative abundance (number/m^2) is lower than that of estuarine systems. This general diversity/abundance relationship is true for the soft sediment offshore areas, but where reef communities occur, diversity, abundance, and productivity are all high.

4. Groundwater Resources

The two major aquifers in the study area are the Floridan aquifer, which is found at depths that generally exceed 300 meters (1,000 feet), and the shallower sand-and-gravel aquifer. The sand-and-gravel aquifer is near the surface and contains a large quantity of freshwater. It is for these reasons that most of the water supply wells are drilled into the upper aquifer. As a result, most of the available water quality data are for this aquifer.

The Floridan aquifer within the study area is composed of porous and permeable coquina (limestone). Water from the aquifer could serve many water supply purposes; however, concentrations of certain constituents have sometimes exceeded desirable limits for certain specific uses.

In the sand-and-gravel aquifer, the dissolved solids concentrations are generally low since there is relatively little soluble material in the sands and gravels. The groundwater is, however, more mineralized than surface waters since it remains in contact with rocks and soils for much longer periods. The water from this aquifer contains dissolved carbon dioxide that originates primarily from the decay of soil organic matter, as well as from the atmosphere. The dissolved carbon dioxide forms carbonic acid that encounters little buffering action and has strong corrosive effects. This corrosion is further enhanced by the generally low iron content of the water, which is 0.06 to 4.9 mg/l (0.50 to 40.9 lb/mgal).

5. Terrestrial Systems

A complete inventory of land-based resources is critical to the evaluation of wastewater management impacts. Impacts to terrestrial systems may result from several factors including the implementation of land application systems or increased development induced through the provision or expansion of wastewater facilities.

a. Ecology

Comprehensive species lists of woody and herbaceous plants for all of the local community types may be found in the 201 Facilities Plan (1978). This report may also be referred to for more complete lists and scientific names of amphibians, reptiles, mammals, and birds known from the study area.

Other important references describing the terrestrial ecology of the study area include works by the Florida Department of Natural Resources (DNR 1975), Hartman (1978), Monk (1965, 1968), and the National Park Service (NPS 1976, 1978).

b. Protected Species

The study area region is known to contain as many as 44 species of protected animals. The most important terrestrial habitats for protected animals are wetlands (salt marshes, freshwater marshes, and swamps) and the coastal dune/beach community. All of the aquatic habitats (freshwater streams, estuaries, and marine waters) are important habitats for protected animals, but estuaries are particularly valuable. Recently, the Perdido Key beach mouse has been proposed for inclusion on the federal list of endangered species along with the designation of critical habitat in Escambia County, Florida, and Baldwin County, Alabama.

Protected plants are covered by state laws only. A conservative estimate totals at least 50 protected plant species for the study area. Swamps, hardwood hammocks, and wet pine platwoods are the most important habitats.

6. Sensitive Areas

Sensitive areas are environmental features which warrant particular consideration for reasons such as uniqueness, rarity, hazardous conditions, high ecological value, and low tolerance to perturbations. Sensitive areas which are especially important to this study area include barrier islands, estuaries, off-shore marine reefs, wetlands, hardwood hammocks, habitats for protected species, floodplains, and groundwater recharge areas. These are all represented in the study area and have been carefully examined. All wastewater management actions should fully consider these resources.

7. Physiography

Information about topography, geology, and soils of the area is important in establishing wastewater management alternatives. The terrain and slope of land affects pumping of sewage and potential land application and on-lot sites. Surface and subsurface geology also affects the placement of interceptors, groundwater resources, deep-well injection potential, land application, and on-site systems. Of most importance to the latter two are soils. Characteristics such as permeability, porosity, grain size, and organic content all have effects on the applicability of certain wastewater treatment/disposal systems.

8. Air Resources

Air resources are described by four components: climate, air quality, odor, and noise. For the analysis of wastewater management alternatives, climate is the most important. Odor serves primarily as an indicator of problems with existing facilities and can impact alternatives development. Odor complaints in the Pensacola area are received infrequently and are not considered a problem by Florida DER. Air quality and noise levels are currently acceptable, although the air quality standard for ozone was nearly reached in 1980. Neither air quality nor noise is affected by primary impacts of wastewater management, but both can be affected by secondary impacts.

E. Existing Man-Made Environment

1. Land Use

Present and future land use patterns are primary factors in wastewater management planning. Present land use analyses are necessary to identify current wastewater treatment problems and indicate the type and location of treatment and disposal facilities required. Future land use projections based on current trends and land suitability are necessary to accurately develop and evaluate proposed wastewater management alternatives.

a. Present Land Use

The majority of developed land within the study area is located within the city of Pensacola and adjacent areas of Escambia County. Of the 57,129 acres of developed land, Pensacola contains 20.4 percent (11,654 ac.), Escambia County 69.3 percent (39,590 ac.), and Santa Rosa County 10.3 percent (5,884 ac.). Pensacola is 76 percent developed whereas Escambia County is only 53 percent developed.

Of the 76,704 total land acres of Santa Rosa County in the study area, approximately 43,100 acres are dedicated to the Eglin Air Force Base/Eglin Reserve. This represents a large amount of land which cannot be considered as having development potential. The major node of developed land in the Santa Rosa County portion of the study area occurs in and around the city of Gulf Breeze. The primary land use in this area is single-family residential.

b. Future Land Use

Based on the amount of undeveloped land in the city of Pensacola in 1981 (24 percent), undeveloped acreage is projected to decrease to 6 percent by 1996. The largest change is anticipated in the residential category, less than two dwelling units per acre, which will increase from 528 acres (3 percent of total) in 1981 to 2160 acres (14 percent of total) by 1996. This increase will occur by in-filling the vacant areas outside the central business district as well as redevelopment of existing areas. Also, transportation/utilities/communications will experience a 700-acre (5 percent) increase over the same period.

Development in Southwest Escambia County, including Perdido Key, is also likely to increase based on current trends. The 208 population projections indicate less development will occur in this area due to the presence of floodplains, wetlands and other environmentally sensitive areas. In practice, this requires local land use planning that has only recently addressed this problem at all. Based on current trends, development in these coastal areas will continue at a rapid pace with few controls. The ECUA has plans to serve in excess of 30,000 people in Southwest Escambia County, located primarily on Perdido Key.

Santa Rosa Island will remain virtually the same as in 1981 with the exception of residential and commercial development around Pensacola Beach. Much of the island is not available for development because of public ownership or environmental constraints. The area around Navarre Beach is also expected to experience some development.

Santa Rosa County, large portions of which are dedicated to military use, has 14,000 acres of undeveloped yet buildable land within the study area. While growth is expected to continue near Gulf Breeze, limited access to commercial and employment opportunities of the region could hamper large-scale development of this area. The portion of Santa Rosa County in the study area is not expected to experience significant growth by 1996. The land use pattern will continue to be dispersed residential use on the peninsula with Gulf Breeze retaining its nodal characteristics for that area.

2. Development Controls

Laws, ordinances, and regulations at the federal, state and local levels place numerous restrictions on the use of the natural environment in the study area. These restrictions effectively limit development in certain areas and have a dramatic impact on the pattern and density of development. Regulations concerning wastewater treatment are particularly important determinants of land use patterns and density. The State of Florida has been particularly progressive in terms of environmental protection. State laws in Florida protect a variety of environmentally sensitive areas including submerged lands, beaches, wetlands, and coastal waters. Florida is one of the few states to mandate local planning and require local comprehensive plans. The State has also established Areas of Critical State Concern and identified Developments of Regional Impact in order to minimize potential adverse impacts of large-scale development. State regulations also control the use of septic tanks and establish standards for wastewater treatment and disposal. In most cases state regulations are more stringent than federal regulations.

a. Land Use Regulations

Table III-8 shows a matrix of land use management techniques currently in use by the local governments and authorities in the study area. These local regulations and ordinances provide the major conservation mechanisms for resource protection in Escambia and Santa Rosa Counties. These protective measures have been legislated at the various levels of government because of the realization that long term economic development is directly dependent on the conservation of natural resources. These resources must be conserved to assure that the natural functions they serve, on which man is dependent, will continue to provide a sound economic base for future development in the EIS study area. Only Pensacola and Pensacola Beach have implemented adequate land use management tools to date. The unincorporated areas of both counties have insufficient land use regulations to adequately control development in environmentally sensitive areas.

b. Wastewater Facilities Regulations

Control methods for wastewater facilities in Santa Rosa and Escambia Counties are used to protect environmentally sensitive areas and to effectively dispose of wastewaters. Although local ordinances, by virtue of the location of their administrators, can be the most effective means of dealing with the developmental and environmental issues raised in the 201 process,

Table III-8. Land Management Mechanisms in the EIS Study Area.

	Escambia Co.	Pensacola	Santa Rosa Is. Authority	Santa Rosa County	Gulf Breeze
Zoning Ordinances	X(1)	X	X		X
P.U.D. Provisions	X	X	X		
Buffer Zone Requirements	X				X
Landscape Ordinance			X		X
Site Plan Review Process	X	X	X	X	X
Flood Plain Process	X	X	X	X	X
Subdivisions Regulations	X	X	X	X	X
Sedimentation Erosion Control Ordinance	X	X	X		X
Tree Ordinance		X			X
Airport Zoning Ordinance		X		X	
Estuarine/ Wetland Set Back Ordinance	X		X		
Historical Preservation		X			

(1) Perdido Key

they are not often specific to wastewater facilities. Such facilities are regulated at the state level.

3. Community Services and Facilities

Community services and facilities in the study area are currently considered adequate for the existing population, based on national and local standards. However, community facilities must also be adequate to provide for future growth in order to prevent critical deficiencies and eliminate the need for hasty and costly expansion. Planning in the study area is currently underway to provide for future needs.

Water supply and demand will probably be the critical issue in the future. Currently, water supply, dependent primarily on the sand-and-gravel aquifer, is keeping pace with water demand. However, as the demand for water increases and the aquifer recharge capacity decreases (due to increased development), saltwater intrusion may become a critical problem. Future water demand will probably be met with a combination of increased pumping capacity, new well sites, alternative (surface) water sources, and increased conservation and recycling.

4. Economic Profile

A regional economic profile involves the ananlysis of local economic indicators, area industries and natural resources. An analysis of local financial considerations can also be used to provide an indication of the financial stability of the local governments. An economic profile of the Pensacola region indicates a moderately diverse, stable economy with projections for slow, positive growth.

5. Historic and Archeological Resources

A number of known historic sites are found in the two-county area (Tesar, pers. comm.) and are listed in the National Register of Historic Places (U.S. Dept. of Interior, National Park Service 1973). A list of the most important sites is included in the 201 Facilities Plan (1978). Most of these historic sites are associated with Pensacola and the barrier islands. Some of the most important historic sites in the study area include Fort Pickens (site of the major Civil War conflict), Fort George (site of the siege of Pensacola in 1781), Christ Church (oldest building of worship in northwest Florida), Light House (built in 1859 and marks the involvement of U.S. Navy in the area), Seville Square Historic District (site of the mid-eighteenth century settlement of Pensacola), and Battery San Antonio (built 1803-1814 as a defense for Spanish forces). In addition, numerous buildings in the area are listed as historic landmarks (201 Facilities Plan 1978).

6. Wastewater Facilities

The Main Street Wastwater Treatment Plant serving Pensacola is the largest treatment plant in the study area. Currently completing a program of expansion and modification, this plant is operating at an expanded 75,700 m^3/day (20.0 mgd) capacity with multiple hearth incineration of sludge. The plant is preparing to go on-line with advanced treatment. Table III-9 contains a further description of this facility. Operating characteristics for the Main Street Plant since expansion are shown in Table III-10.

Descriptions of other facilities in the study area with design capacities greater than 378 m^3/day (100,000 gpd) are also given in Table III-9. These smaller plants generally utilize some form of activated sludge treatment and dispose of their sludge to a landfill after digestion. Except for the Scenic Hills and Santa Rosa Shores Plants, which utilize spray irrigation, all of the plants discharge their effluent to surface waters. Operating characteristics are shown in Table III-10. Some systems experience large seasonal variations in flow.

There are 22 treatment plants with capacities of 378 m^3/day (100,000 gpd) or less in the Escarosa study area. The majority of these package plants make use of extended aeration treatment with disposal to percolation ponds. Seasonal variations in flow are also experienced by many of these facilities.

Only one industrial wastewater treatment facility with capacity greater than 3,785 m^3/day (1.0 mgd) is located in the study area. Located at the Pensacola Naval Air Station (NAS), this plant treats both domestic and industrial wastewaters. Five industrial facilities located outside the study area have the potential to affect water quality within the study area because of their surface water discharges. There are three chemical companies: Air Products, American Cyanamid, and Monsanto; a paper company, St. Regis; and a power company, Crist Electric.

Individual on-site disposal systems are regulated by Chapter 10D-6, State of Florida "Standards for Individual Sewage Disposal Facilities." The use of these systems are regulated by the Florida Department of Health and Rehabilitation Services and the county health departments. Prior to the installation of any system, a permit from the Health Department must be obtained. Presently, the health departments are in charge of issuing permits for systems up to 18.9 cubic meters per day (5,000 gals. per day). Larger systems are under the jurisdiction of the Florida Department of Environmental Regulation.

F. Environmental Impacts Associated with Disposal Alternatives

One of the major issues of this EIS is ultimately how and where to dispose of wastewater. The study area has a large centralized system, in the Main Street treatment plant, to handle the wastewater of most, if not all, of Escambia County. The main limitation is its disposal location within the Pensacola Bay system. The other existing treatment plants dispose their effluent to bayous and other estuarine systems. On the barrier islands, Perdido Key is served by small community/on-site systems whereas Santa Rosa Island is served primarily by a centralized system, disposing to Santa Rosa Sound.

Prime consideration was given to impacts resulting from wastewater management alternatives on sensitive coastal areas and barrier islands. Given the sensitivity and value of these areas, great care must be exercised to institute proper planning and decision-making processes. While federal funding can help solve wastewater management problems, local planning must be

Table III-9. Existing Wastewater Treatment Facilities Capacities Greater Than 378 m^3/day (0.1 MGD)

Treatment Plant	Owner or Operating Authority	Design Capacity, m^3/day (mgd)	Treatment Process Wastewater/Sludge	Effluent Disposal	Sludge Disposal
City of Pensacola					
Main Street	City of Pensacola	75,708 (20.0)	Advanced[1]/Incineration	Pensacola Bay	Sanitary Landfill
Scenic Hills	City of Pensacola	3,785 (1.00)	Activated sludge/Incineration at Main Street	Spray Irrigation	Sanitary Landfill
Mainland Escambia County					
Avondale	Escambia County	3,785 (1.00)	Contact Stabilization/Aerobic digestion	Bayou Marcus	Beulah Landfill[2]
Pen Haven	Escambia County	1,136 (0.30)	Trickling Filter/Aerobic digestion	Bayou Chico	Beulah Landfill[2]
Warrington	Escambia County	7,571 (2.00)	Contact Stabilization/Aerobic digestion	Jones Swamp Creek-Bayou Chico	Beulah Landfill[2]
Moreno Courts	Pensacola Housing Authority	795 (0.21)	Extended aeration, package plant/Anaerobic digestion	Jones Swamp Creek-Bayou Chico	Sanitary Landfill
Pensacola NAS Industrial	U.S. Navy	3,785-4,732 (1.00-1.25)	Aerated equalization, biological treatment of phenols/sludge drying beds	Pensacola Bay	Hazardous Waste secured landfill in Alabama
Domestic	U.S. Navy	11,356 (3.00)	Extended aeration/Aerobic digestion	Pensacola Bay	Landfill or land-spread
Saufley Field	U.S. Navy	795 (0.21)	Trickling filter/Aerobic digestion	Drainage ditch to Perdido Bay	Sanitary Landfill
Santa Rosa Island					
Pensacola Beach	Santa Rosa Island Authority	4,542 (1.20)	Activated sludge/Sludge thickening	Santa Rosa Sound	Beulah Landfill[2]
Navarre Beach	Santa Rosa County Beach Administration	1,703 (0.45)	Contact stabilization/Aerobic digestion	Santa Rosa Sound	Holly Landfill
Santa Rosa County					
Gulf Breeze	City of Gulf Breeze	1,893 (0.50)	Extended aeration <0.30 mgd, Contact stabilization >0.30 mgd/Aerobic digestion	Santa Rosa Sound	Holly Landfill
Santa Rosa Shores	Santa Rosa Shores Utility Company	492 (0.13)	Extended aeration/Aerobic digestion	Spray irrigation to golf course	Holly Landfill

1. Treatment includes phosphorus control, nitrification, denitrification, and ozonation.
2. Sludge to be incinerated at Main Street in the future.

Sources: "201 Facilities Plan for South Escambia and Santa Rosa Counties"; 208 Supplement, "Residual Waste Management Work Element 530"; Owners and operating authorities.

Table III-10. Average Effluent Characteristics for Domestic Wastewater Treatment Facilities Capacities Greater than 378 m^3/day (0.1 mgd)

Treatment Plant	Population Served	Average Flow m^3/day (mgd)	Average Concentrations, mg/l (lb/mgal)						Range of Fecal Coliform Values per 100 ml (Values per pint)
			BOD$_5$ Inf/eff	TSS Inf/eff	Nitrogen	Total P	pH	Chlorine Residual mg/l (lb/mgal)	
Main Street[1]	120,000	38,611 (10.2)	279/10 (2328/83)	782/10 (6526/83)	15(125) (TKN)	4 (33)	7.4	1.2 (10.0)	2-25 (9.5-118)
Scenic Hills	2,800	1,060 (0.28)	154/6 (1285/50)	146/4 (1218/33)	-	-	6.8	0.8 (6.7)	0-5 (0-24)
Avondale	11,950	3,770 (0.996)	210/8 (1752/67)	162/12 (1352/100)	-	-	7.2	0.6 (5.0)	2-228 (9.5-1079)
Pen Haven	6,660	1,476 (0.390)[3]	188/10 (1569/83)	168/12 (1402/100)	-	-	6.8	0.5 (4.2)	2-647 (9.5-3062)
Warrington	18,000	4,921 (1.3)	188/2 (1569/17)	170/2 (1419/17)	-	-	6.8	0.5 (4.2)	0-13 (0-62)
Moreno Courts	2,100	447 (0.118)	144/10 (951/83)	49/9 (409/75)	-	-	6.8	0.9 (7.5)	0
Pensacola NAS[2]	-	10,220 (2.7)	-/9.2 (-/80)	-/11.6 (-/97)	2.3(19) (TKN)	1.0 (8.3)	6.9-7.2 (Average range)	0.8 (6.7)	2-16 (9.5-76)
Saufley Field	-	216 (0.057)	-/7.5 (-/62)	-/5.5 (-/46)	-	-	6.3-6.6 (Average range)	1.54 (12.8)	0-11 (0-52)
Pensacola Beach	8,240	2,760 (0.729)	93/6 (776/50)	96/6 (801/50)	-	-	6.6	1.2 10)	3-28 (14-132)
Navarre Beach	1,250	481 (0.127)	87/7 (726/58)	81/5 (676/42)	-	-	7.2	0.6 (5.0)	2-93 (9.5-440)
Gulf Breeze	2,100	821 (0.217)	264/18 (2211/150)	306/16 (2554/134)	20(167) (Total N)	4.6(38)	7.1	1.1	2-1430 (9.2) (9.5-6768)
Santa Rosa Shores	1,138	534 (0.141)	260/14 (2170/117)	333/17 (2779/142)	-	-	5.8	0.8 (6.7)	2 (9.5)

Sources: Florida DER Northwest District Office Files
Department of the Navy, Southern Division, Naval Facilities Engineering Command.

Period of record for this table - October 1979 through September 1980

1. Main Street is presently completing expansion and modification. Values cited represent operation since expanded plant went on-line, 2-12-80, however, not all of the advanced treatment processes have been completed.
2. Pensacola NAS treats both domestic and industrial wastewaters; cited values are for combined effluent. Period
3. Severe infiltration problem.

coordinated and implemented to result in effective solutions. Otherwise, federal funding could lead to accelerated environmental problems and may be unwise, particularly in light of potential replacement costs of facilities on barrier islands.

Certain attributes and detriments are associated with each of the disposal options in the study area. The following sections discuss the major environmental considerations associated with these options.

1. Estuarine Discharges

Estuarine discharges are those which enter brackish (part salt water, part fresh water) water bodies, including the bayous and bay. Due to the topography of the area, with few rivers and the peninsula and barrier islands, effluent would have to be pumped long distances to either fresh water or the Gulf. Estuaries are critical as hatcheries, nursing grounds, and as a food source for many aquatic organisms, including most commercial species. While they are adapted to undergoing large fluxes in salinity and other components, they remain sensitive to pollutant sources due largely to slow flushing. Due to their sensitive nature and important function, estuarine discharges are probably the most undesirable environmentally.

This poses a dilemma for the Pensacola area since nearly all wastewater is discharged to estuarine systems. One of the alternatives posed by this study would remove all estuarine discharges in Escambia County other than Main Street and Pensacola Beach. This has some attributes, but they need to be weighed relative to the assimilative capacity of the increased load to Pensacola Bay.

Other alternatives involve discharging to land systems or the Gulf, which could relieve some of the loadings to the estuarine systems.

2. Land Disposal

Land disposal systems include spray irrigation, septic tanks and sand mounds, and percolation ponds. Each of these offers potentially positive alternatives to estuarine discharges.

Spray irrigation sites were identified throughout the study area but, due to their location relative to existing facilities, are not feasible in many cases. They are practical only for Navarre Beach and Avondale unless it is desired, or necessary, for environmental purposes to pump effluent several miles. Revenues can be realized from sale of crops which could increase its cost-effectiveness and it is an environmentally preferred alternative.

Septic tanks and sand mounds, if properly constructed, inspected, and monitored, can be an effective wastewater treatment/disposal system for the barrier islands. Many upland areas elsewhere in Santa Rosa and Escambia Counties would also support on-site systems. This could take a large burden off discharging to Pensacola Bay. The key to successful use of on-site systems is their proper construction and service.

Percolation ponds associated with small community package plants can also be a sound option. However, like on-site systems they must be properly constructed and adequately monitored. Elevated nitrogen levels have been observed from the monitoring wells of some percolation ponds. The implications of these levels on water quality or public health have not yet been thoroughly evaluated. At current densities, percolation ponds on the barrier islands have not led to documented water quality or public health problems. In most cases, adequate mitigation techniques are available to solve potential problems.

3. Gulf Disposal

The impacts of a Gulf disposal off the coast of Pensacola is uncertain without detailed information on tide and current patterns, benthic habitats, and substrate. Ocean outfalls have been used for various communities around the United States but outfalls do not exist off the Florida Gulf coast. With tourism and beaches one of the economic mainstays of the region, great care must be taken if an outfall is recommended. However, based on studies conducted in other coastal areas and scientific knowledge of estuarine versus open ocean systems, a Gulf outfall might be preferrable, environmentally, to an estuarine outfall. This statement is based primarily on the slower flushing characteristics in estuaries and the critical nature of estuaries as feeding and nursing grounds for many marine species. Ultimately, however, implementability of the alternative rests on other environmental considerations (e.g., required mitigation of a Gulf outfall), costs, and availability of other acceptable alternatives that are least costly.

G. Evaluation and Final Screening of Wastewater Management Alternatives

The evaluation of alternatives involves the consideration of several criteria including costs, implementability, operability/reliability, energy consumption, and environmental impacts. This section provides a summary of these criteria as they affect the final screening of wastewater management alternatives.

Costs are determined only for capital expenditures, operation and maintenance, and total present worth costs of the wastewater management facilities. Costs are not calculated for potential benefits or degradation of the environment. The present worth analysis task establishes a total cost value of the capital expenditures and operating costs of each alternative over the duration of the planning period. The present worths for the wastewater management alternatives are developed for a 17-year planning period ending in the year 2000 using an interest rate of 7 3/8 percent. In accordance with EPA guidelines, allowances are made for salvage values at the end of the planning period. Capital and annual operating costs have been estimated for the collection, conveyance, treatment and disposal systems that constitute the alternatives. The unit costs have been estimated in 1981 dollars from literature and actual data available to Gannett Fleming Corddry and Carpenter, Inc., and from EPA handbooks. Capital costs include the costs of equipment and construction plus 30 percent for engineering, inspection, financing, rights-of-way, and contingencies.

The prospects for successful implementation of a wastewater treatment alternative must be addressed in view of both public and institutional realities within the study area. To evaluate the implementability of alternative wastewater management systems, factors such as public acceptability, institutional concerns, and planning flexibility are considered.

The reliability of a wastewater management system may be defined as a measurement of the ability of a system to perform its designated function without failure. Failure in this situation would be the inability to consistently achieve and maintain the effluent quality standards for which the system was designed. Three reliability classes are associated with wastewater treatment facilities (USEPA 1974):

- Reliability Class I--Treatment facilities that discharge into navigable waters that could be permanently or unacceptably damaged in only a few hours by poor quality effluent. Requirements for Class I facilities are some type of surge-control device, back-up units for all major pieces of equipment, and standby power.
- Reliability Class II--Treatment facilities that discharge into navigable waters that would be permanently or unacceptably damaged by long-term (several days) effluent-quality degradations. For secondary treatment systems, requirements for Class II facilities are similar to those for Class I facilities.
- Reliability Class III--All other treatment facilities not covered under Class I and Class II. Some standby power is required, as are certain basic redundancy requirements, such as extra pumps and blowers.

The alternatives presented in previous sections represent those most likely to be considered for implementation. Numerous factors affect the evaluation process, including environmental impacts, costs, implementability and effluent limitations. An additional factor since the inception of this EIS is the combination of City of Pensacola and Escambia County Utilities into the Escambia County Utilities Authority. The development of the Utilities Authority placed all Escambia County wastewater facilities (except Santa Rosa Island) under their jurisdiction. This significantly influences the implementability of regional alternatives conveying effluent to the Main Street plant. Additionally, the Utilities Authority proceeded under consent decrees imposed by the State DER to close Pen Haven and begin planning the phase out of the Avondale and Warrington plants. The least costly alternative of those available to the Authority was to plan conveyance to the Main Street facility.

The Santa Rosa Island Authority also proceeded independently with plans to upgrade and increase the size of their wastewater facility on Santa Rosa Island. Upgrading has been completed and expansion is now being planned. These measures were taken due to increased flows from an expanding population and requirements of DER.

Perdido Key has been served historically by on-site and small community systems. With increased development pressure, however, the Escambia County Utilities Authority is considering sewer service to the area. A District I Master Wastewater Plan concerning the conveyance and treatment of wastewater generated from southwest Escambia County, including Perdido Key, was completed in January 1984.

These factors are all important in the final screening of alternatives. Some alternatives not considered past the development phase of the EIS have been pursued by the wastewater management authorities. For example, location of a treatment facility on Perdido Key to serve Perdido Key was ruled out by the EIS due to location in the 100-year floodplain and other environmental considerations. However, the Authority is considering this alternative as an option for servicing the Perdido Key area. Therefore, this alternative is included in the final screening of alternatives for comparative purposes with other alternatives more fully considered by the EIS. The final comparison of alternatives includes:

1. The 201 Plan alternatives
2. The alternatives currently being considered by the wastewater management authorities
3. The alternatives considered most cost-effective and environmentally acceptable based on EIS.

The present worth costs shown on the following pages are based predominantly on costs developed during the Alternatives Evaluation phase of the EIS. More current cost data have become available for conveyance of Avondale and Warrington flows to the Main Street plant and expansion of the Pensacola Beach plant. These figures have been incorporated into the total present worth costs. Costs for the continued operation and maintenance and, if necessary, expansion of the Main Street and Scenic Hills plants are not included in the total present worth costs for Escambia County alternatives. The addition of these figures would have little effect on the relative differences in the costs as presented.

Environmental impacts associated with wastewater management alternatives vary, depending on the magnitude of flows, level of treatment, and type and location of disposal. Removal of discharges from creeks, bayous, rivers and estuaries by conveying effluent to the Main Street plant reduces loads to these systems but increases loads to Pensacola Bay. Analyses are required to determine relative impacts and benefits before alternatives can be selected. The following sections provide a general description of the predominant environmental impacts associated with the final screening of alternatives.

1. Escambia County

The Escambia County portion of the study area includes the Northwest, Scenic Hills, Main Street, Avondale, Pen Haven, Warrington, Southwest and Perdido Key subareas (see Figure III-1). All alternatives include the maintenance of current wastewater management practices for Scenic Hills. All alternatives include maintenance of the Main Street plant at its existing 20 mgd capacity.

Environmental impacts associated with these alternatives relate primarily to water quality. Aquatic and terrestrial ecology are also issues, as wetlands are common in the Southwest Escambia area. Population and development demands are the primary man-made environmental concerns. While few water quality (Perdido Bay, Bayou Chico and Bayou Marcus) or other environmental problems have been documented, the sensitivity of the area must be recognized by local and state officials and incorporated into planning and design-making processes if the area's resources are to be adequately protected in the future. The extent and type of impacts resulting from the development of this area rest on local and state decision making. All the alternatives include continuing the existing level of treatment at the Main Street Plant with discharge to Pensacola Bay. The plant capacity is projected to remain at 20 mgd (for advanced treatment) although 26 mgd can probably be treated at the advanced secondary level of treatment. Sampling programs have been ongoing for the past few years to determine the appropriate level of treatment necessary to protect the water quality of Pensacola Bay. To date studies have proved inconclusive and additional data are being collected to reconcile this issue.

Alternative 1

This alternative provides centralized wastewater service with a new Southwest County treatment plant. This plant would have secondary treatment with discharge by outfall to the Gulf of Mexico. This is the 201 Alternative which includes the Avondale, Pen Haven, Warrington, Northwest, Perdido Key and Southwest Escambia service areas with a combined flow of 7.7 mgd.

Adverse impacts could result to the marine environment from the construction and operation of the outfall; however, many of these could be mitigated. Additional surveys would be required to locate the outfall to minimize these impacts. Also, impacts to beaches and areas surrounding the new plant site caused by construction, pipelines and induced development need to be considered.

This alternative would eliminate the discharges from the Avondale and Pen Haven plants which are causing water quality problems in Bayou Marcus Creek and Bayou Chico. However, these areas have already been committed to the Main Street plant, which would make this alternative difficult to implement. No other significant water quality or public health problems have been documented.

Alternative 1 would provide federal support for developmental projects with growth-induced impacts to water quality, wetlands and barrier islands. Additional pressure to develop these resources would result as well as increased nonpoint source runoff due to higher densities surrounding Back River, Big Lagoon and Perdido Key.

The present worth cost of this alternative is $64.8 million.

Alternative 2

This alternative provides centralized wastewater service with new treatment plants for the Southwest County and Perdido Key areas. The Southwest County treatment plant would have secondary treatment with discharge by land application. The capacity of this plant would be 0.54 mgd with 50 percent of the area's population served. The Perdido Key treatment plant would have secondary treatment with discharge by land application. Projected capacity is 1.7 mgd with 100 percent of the population sewered. The Warrington and Avondale treatment plants would be phased out with flows conveyed to the Main Street plant for treatment and disposal. Centralized sewer service would be provided to the Northwest area with conveyance to the Main Street plant for treatment and disposal.

No water quality or public health problems have been documented in the Southwest County, Perdido Key, or Northwest County areas. Likewise no problems are projected if 208 population projections and state permitting procedures are followed that adequately account for pollution sources and protect designated uses. Beneficial water quality impacts would result from removing wastewater discharges from Bayou Marcus and Bayou Chico (Avondale, Warrington and Moreno Courts).

This alternative would promote development with growth-induced impacts to area water quality, wetlands and a sensitive barrier islands environment. Increased water quality impacts would occur from nonpoint sources due to higher density development.

The present worth cost of this alternative is $25.3 million.

Alternative 3

This alternative continues current wastewater management practices of use of package plants and septic tanks in Southwest County, Perdido Key and Northwest County. The Warrington and Avondale treatment plants would be phased out with flows conveyed to the Main Street plant for treatment and disposal.

Beneficial water quality impacts would result from removing the Avondale, Warrington and Moreno Courts discharges from Bayou Marcus Creek and Bayou Chico. No other significant water quality or public health problems in this area have been documented or are projected if state permitting procedures are followed. Growth related impacts would not be as significant as with Alternatives 1 and 2.

The present worth cost of this alternative is $9.0 million.

2. Santa Rosa Island/Gulf Breeze Peninsula

Alternatives for Santa Rosa County address Santa Rosa Island and the Gulf Breeze Peninsula including the Gulf Breeze, Pensacola Beach and Navarre Beach service areas (See Figure III-2). The options considered range from regional to on-lot systems.

Population densities, development pressure and recreation resources are the man-made environments primarily impacted by these alternatives. With most alternatives resulting in surface water discharges, water quality/ecological issues are also important. While few problems have been documented at current flows, water quality and recreation resources could be significantly impacted by dramatically increased loads from future discharges into Santa Rosa Sound. This situation should be monitored closely as it develops.

Alternative 1

This is the 201 Plan Alternative. A new regional plant would be constructed on the eastern end of the Gulf Breeze Peninsula with disposal by land application at the Eglin Air Force Base. Capacity of the plant would be 8.0 mgd with secondary treatment. The plant would treat flows from Gulf Breeze, Pensacola Beach and Navarre Beach.

No significant water quality or public health problems are documented for this area. Implementation problems would be associated with obtaining suitable land at Eglin AFB. Local attempts to reach agreement have not been successful.

This alternative would promote a higher rate and density of development. Greater pressure would be exerted to develop wetland, barrier island, floodplain and other sensitive areas. Higher density development would result in greater nonpoint pollutant loadings to area waters, including Escambia Bay, East Bay and Santa Rosa Sound.

The present worth cost of this alternative is $36.9 million.

Alternative 2

This alternative would convey flows from Pensacola Beach and Gulf Breeze to the Main Street plant for treatment and disposal. Flows from Navarre Beach would be treated at the existing treatment plant with land application.

Loadings from Santa Rosa County would be contributed to the Escambia County Main Street plant and use capacity which could otherwise be used for other parts of Escambia County. This situation could present a significant implementation problem.

Further, this alternative could promote a higher rate and density of development. Greater pressure would be exerted to develop wetland, barrier island floodplain and other sensitive areas. Higher density development would result in greater nonpoint pollutant loadings to area waters.

The present worth cost of this alternative is $17.3 million.

Alternative 3

This alternative involves expansion of the Pensacola Beach plant to 2.4 mgd with the existing level of treatment and discharge point. Class 1 reliability will be provided. The existing plant at Navarre Beach would remain at its current capacity. The City of Gulf Breeze would continue treatment and disposal at the existing location with expansion from 0.5 to 0.8 mgd. The continued use of package plants and septic tanks is projected for the Gulf Breeze Peninsula.

No significant public health or water quality problems have been documented for this area. Implementation of this alternative would support additional development and higher density with associated growth-induced impacts to the sensitive barrier island environment. These impacts, however, would not be as significant as those in Alternatives 1 and 2.

The present worth cost of this alternative is $7.4 million.

Alternative 4

This alternative conveys flows from Pensacola Beach and Gulf Breeze to Pensacola Bay following treatment at Gulf Breeze. Flows from Navarre Beach would be treated at the existing plant with discharge by land application.

All municipal discharges from Santa Rosa Sound would be removed by this alternative. While that could result in water quality improvements in the Sound, it would also increase loads to Pensacola Bay. No existing adverse impacts to Santa Rosa Sound from these discharges have been documented. Implementation of this alternative would support additional development and higher density with associated growth-induced impacts to the sensitive barrier island environment. These impacts, however, would not be as significant as those in Alternatives 1 and 2.

The present worth cost of this alternative is $10.8 million.

H. Summary of Environmental Evaluation

The evaluation of environmental impacts and associated considerations (i.e., induced impacts, barrier island policy) for Southwest Escambia County indicates that the local alternative or a hybrid is most acceptable. However, there are constraints to this or any other alternative. If on-site/small community systems are recommended, implementation of policies governing installation, maintenance, and inspection is critical. It is also possible that this alternative would not support the population levels which the local agencies apprarently are encouraging on Perdido Key.

If sewer systems were utilized to convey sewage to the Main Street or southwest plant, impacts from induced development would likely have negative impacts on the environment. To reduce such impacts, conveyance systems could be sized to serve only a predetermined populace that may relate to an accepted carrying capacity. Without local land use planning and more thorough implementation of ordinances or regulations, negative environmental impacts could result from any wastewater management alternative due to inherent problems of unplanned development in sensitive areas.

For the remainder of Escambia County, the most acceptable environmental solution involves removal of effluent from smaller streams and estuaries. This would give impetus to the regional alternatives which centralize wastewater at the Main Street facility. This does not imply an absence of environmental problems resulting from the Main Street plant but considers primarily the assimilative capacities, existing conditions and potential for improvement of the receiving waters in question.

For the Santa Rosa Island/Gulf Breeze Peninsula area, the environmental evaluation shows no significant water quality or public health problems documented in the area. All discharges in the area are meeting their permit limits and are eligible based on EPA and FDER regulations to have their permits renewed. The expenditure of large amounts of funds to construct a larger more regionalized system would promote additional growth with associated adverse impacts to the area's sensitive barrier island, wetland, floodplain and surface water resources.

CHAPTER IV - REVISIONS TO THE DRAFT EIS

As has been stated in Chapter II conveyance and associated funding is recommended for transporting the flows from the Avondale, Warrington and Moreno Courts wastewater treatment plants to the Main Street plant. Due to pressure from Florida DER to terminate the Avondale and Warrington discharges, work has already begun to phase out the Avondale facility. As a result, funding assistance will not be needed for that action. Funding assistance is desired by the Escambia County Utilities Authority (ECUA) for phasing out the Warrington plant.

Another recent development is the plan by the ECUA to build wastewater facilities serving Perdido Key and Southwest Escambia County. The current plans include the following:

Plant Size	Anticipated Start-Up	Location	Disposal
0.3 mgd	October 1984	Perdido Key - adjacent to Vista Del Mar facility	Percolation ponds
1.0 mgd	Spring 1986	Same as above	Filtration with disposal via percolation ponds and land application
2.0 mgd	1987-1988	Mainland - tentatively sighted south of New Gulf Beach Hwy near the intersection with Bauer Rd.	Same as above

Both wastewater facilities on Perdido Key are planned as interim plants although their period of operation has not been specified. Disposal methods listed are those currently envisioned by ECUA. These actions are being taken independent of this EIS.

The following revisions to the Draft EIS should be noted:

	Change:	
Location	From	To
P. II-20 (under Source to Table II-4)	USEPA, October 1977.	USEPA, 1981
P. II-35 (under a.3.)	11.3 mgd	7.7 mgd
P. II-42 (under e.1.)	delete "secondary treatment with land application"	
P. II-45 (under 3.a.)	delete "secondary - land application"	
P. III-7	The tidal surge....	The storm surge....
P. III-19 (Table III-1)	add an "X" under Escambia County for P.U.D. Provisions, Buffer Zone Requirements and Estuarine set back.	
P. III-27 (under b., para. 3)	The landfill at Beulah... wastewater sludge.	The landfill at Beulah will not accept sludge after June 25, 1984.
	The Klondike site... for an additional year.	The Klondike site is no longer in use.
(para. 4)	This site is scheduled... next twenty-five years.	This site, the Perdido Landfill (a 424-acre tract north of Interstate 10) has been in operation since July 1981 and should serve the needs of Escambia County for many years.

CHAPTER V - EIS COORDINATION/PUBLIC PARTICIPATION

A. Introduction

This chapter describes the activities undertaken to inform and interact with governmental agencies and public interests potentially affected by this EIS. Coordination activities included:

1. A public scoping meeting
2. Formation of a Review Committee encompassing a broad spectrum of public and private interests
3. A series of Review Committee meetings open to the public
4. Placement of EIS documents in the public library
5. News releases
6. Newsletters
7. Meetings with local officials, interest groups and agency representatives.

Each of these has been an important part of the coordination program to inform interested and responsible parties and to obtain their comments on the progress and findings of the EIS.

B. Coordination with Local, State and Federal Agencies

A required element of the EIS is interaction with agencies that have responsibilities with wastewater management and the associated planning processes. Table V-1 lists the agencies involved with the EIS. Their comments have been incorporated as appropriate into the Draft EIS, and these agencies will be involved through the completion of the Final EIS.

C. Public Participation

The first public participation meetings were public scoping meetings, held on July 15 and 16, 1980, in Gulf Breeze and Pensacola, respectively. The purpose of these meetings was to discuss the EIS process, review 201 activities, and gain an understanding of local issues and concerns. After this meeting, interested persons, agencies, and special-interest groups were identified, and an EIS advisory committee was formed.

The EIS Review Committee is composed of representatives from local governments, public agencies, universities, and private organizations in the study area. Its main purpose is to provide input on local concerns and interests, review EIS outputs, and perform liaison functions between EPA and the community.

Table V-2 lists the organizations and interest groups which comprise the Review Committee. An attempt was made to have a cross-section of economic, business, institutional, public and private interests represented on the

Table V-1. Agencies Involved with the EIS.

Local Agencies

City of Gulf Breeze
City of Pensacola
Escambia County Health Department
Escambia County Utilities Authority
Midway Water System
Pensacola Chamber of Commerce
Santa Rosa Island Authority
West Florida Regional Planning Council

State Agencies

Florida Department of Environmental Regulation
Florida Department of Natural Resources
Florida Department of State (Division of Archives, History and Records Management)
Florida Game and Freshwater Fish Commission

Federal Agencies

U.S. Environmental Protection Agency (Gulf Breeze Research Laboratory)
U.S. Fish and Wildlife Service
U.S. Department of Agriculture (Soil Conservation Service)
U.S. Department of Interior (Gulf Islands National Seashore)

Table V-2. Members of the EIS Review Committee.

Representative	Organization
1. Tom Bell	Home Builders Association of West Florida
2. Bill Blaskis	City of Gulf Breeze
3. Sylvia Bourke	Self
4. Michael Brim	U.S. Fish & Wildlife Service
5. J. D. Brown	Bream Fisherman Association
6. Tillman Burks	Association of General Contractors of America (N.W. Florida Chapter)
7. Edith Carter	League of Women Voters
8. Judy Coe	Sierra Club
9. Alfred Cuzan	Coastal Zone Studies Program, University of West Florida
10. Richard Dunlap	Escambia County Health Department
11. Sue Gentry	Concerned Citizens of West Escambia County
12. W. F. Hampton	Southwest Escambia Improvement Assoc., Inc.
13. Annis Henry	Perdido Key Development Association
14. Jennifer Hodnette	Self
15. Jack Hornbeck	Pensacola Chamber of Commerce
16. L. A. Hunsley	Woodland Bayous Association
17. Robert Montgomery	Pensacola Board of Realtors
18. Norm Morrisette	Florida Department of Environmental Regulation
19. Tom Morton	Santa Rosa County Attorney
20. Richard Radford	Midway Water System
21. Dwaine Raynor	West Florida Regional Planning Council
22. Tom Serviss	County Forester
23. Jim Sheffer	Santa Rosa Island Authority
24. Steve Sheinbaum	Florida Game and Freshwater Fish Commission
25. William Spriggs	Escambia County Utilities Authority
26. Buck Thackeray	Gulf Islands National Seashore
27. Muriel Wagner	Save Our Beach
28. Chuck Wigley	Escambia County Utilities Authority

committee. For each committee meeting, the Nominal Group Technique was used to maximize participation from each member of the Review Committee.

The first EIS Review Committee meeting was held on November 20, 1980. This meeting was convened to review the Plan of Study and discuss those areas of concern which should be emphasized in the study. Comments received from the committee were addressed as appropriate by the Final Plan of Study.

The second meeting of the Review Committee was held May 27, 1981. Eighteen of the 28 committee members were present. The major topics of discussion were the Environmental Inventory and Alternative Development Reports. Specifically discussed were county population figures, water quality in Pensacola Bay and wasteload allocations for the water bodies receiving municipal wastewater discharges.

The third meeting of the committee was held December 10, 1981. Sixteen of the committee members were present with ten additional observers. The meeting was held to discuss the Alternatives Evaluation Report and associated issues of concern. The major topics discussed were state and federal environmental policies, general environmental impacts of the various alternatives, population issues, development trends and local controls, costs and implementability of conveyance/treatment, and disposal options.

The fourth Review Committee meeting was held February 15, 1984. Eleven of the 28 members attended. After the 18 month hiatus experienced during the project, the list of committee members was updated. Most members remainded on the committee. The purpose of the meeting was to discuss the alternatives selected to receive EPA funding, the status of the EIS and the schedule for the remainder of the project. Questions from the committee centered on water quality conditions in the area and changes in EPA regulations. The Review Committee expressed agreement with the Alternatives selected to receive EPA funding.

In April 1981, a newsletter was sent to the entire mailing list originally compiled for the EIS. This document summarized activities from the beginning of the study through the process of Alternatives Development. The newsletter was intended to inform all interested individuals and agencies of the progress and direction of the EIS.

The Public Hearing was held June 19, 1984 in the City Council Chambers of the Pensacola City Hall. A portion of the Public Hearing was designated for public comment, during which three comments were made and questions were asked by the local press representing both television and newspaper media.

The period for receiving written comments was open until June 29, 1984. Twenty agencies and organizations submitted written responses (see Section E, Executive Summary). The following two sections summarize the major comments of the letters received, and where appropriate, EPA responses.

D. Written Comments and Responses

1. Mr. William B. Spriggs, Manager of Engineering, Escambia County Utilities Authority, Letter of June 22, 1984.

   a. Comment: The Escambia County Utilities Authority has reviewed the draft EIS and generally agrees with the document as presented.

   Response: No response needed.

2. Hon. Joseph Reynes, Mayor, City of Gulf Breeze, Letter of June 26, 1984.

   a. Comment: We question the population figures on page II-9. In 1980 the entire city population was less than 5,500 (Census) and about 600 living units were served by sewer.

   Response: The population figures referred to are based on the 1978 EPA approved projections for Santa Rosa County. Projections were based on the previous census and growth trends. The discrepancy highlighted by this comment is the difference between using projections and actual (Census) population figures. The disaggregation process required to disaggregate county projections to centroids, and the service areas, also can lead to some variances. These variances did not affect the decisions of the EIS.

3. Mr. Rodney I. Kendig, County Administrator, Escambia County, Letter of June 15, 1984.

   a. Comment: The use of 208 population projections as a basis for EPA decision making would seem to be erroneous. These projections were developed in 1976 and 1977 and are now outdated and without validity.

   Response: Population projections for 208 studies are determined by using state and EPA approved county-wide population figures and disaggregating, or distributing, that population throughout the county. This disaggregation process is based on the best information available concerning population and development trends within the county, and awareness of the environmental sensitivity of areas, such as wetlands, floodplains and barrier islands. The EIS used the 208 population figures because they most appropriately acknowledged the concept of carrying capacities in these sensitive areas. For the 208 population figures to ever be accurate, however, the environmental factors incorporated into the projections must also be incorporated into the local decision making processes that control development. If not the 208 projections will not be accurate regardless of the time frame. Therefore, it is still quite valid to use the 208 projections as a benchmark. Growth greater than that indicated by the 208 figures in environmentally sensitive areas is an indicator that an increased probability of environmental degradation is likely to occur in these areas. The EIS re-evaluated the population after the results of the 1980 census were made available and determined that while growth in the Pensacola area was not as great as projections had previously indicated, the figures used were still valid for wastewater planning purposes. It was also evident that growth in environmentally sensitive coastal areas did not reflect and had exceeded the 208 projections, indicating that the type of development controls envisioned to protect important near-coastal areas had not been implemented. Nonetheless, the 208 figures were still valid as an indicator of the level of population growth that adequately considers the unique qualities of wetlands, floodplains and barrier islands in the Pensacola area. It is against standard EPA policy to provide funds for projects based on population projections above the approved 208 levels.

b. Comment: If the Agency's final decision is to be based on old and now quite inaccurate data contained in the draft EIS, that decision may prove to be no more valid than the data on which it will be based.

Response: Information required to make the decisions necessary for completion of the EIS were updated through discussions with local agencies and Florida DER.

4. Mr. James H. Lee, Regional Environmental Officer, Southeast Region, U.S. Department of the Interior, Letter of June 18, 1984.

a. Comment: We believe the EIS should contain a complete environmental and economic analysis of the Gulf outfall alternative.

Response. The Gulf outfall alternative was evaluated in the early stages of the EIS. For several reasons this alternative was not examined past the preliminary analysis. Because of the high cost of constructing outfalls, it was not considered a viable option for small treatment plants such as Navarre Beach. Preliminary cost estimates for a 10,000 foot outfall from a barrier island facility was in excess of $10 million. A Gulf outfall from the Main Street plant would be approximately five times longer and more costly than this. The analyses necessary to place an outfall properly (e.g., determining the distance required to prevent public health problems on beaches, avoidance of reef habitat, etc.) are themselves expensive; therefore, a strong case for the necessity of an outfall is needed. For small discharges other means of disposal are much more cost-effective and all discharges had alternatives other than surface water disposal available to them. In the case of the Main Street plant, sufficient data have not been collected to assess the need to remove its discharge from Pensacola Bay. Certainly if operating at its advanced treatment potential, the need for a Gulf outfall is reduced. Although over many years of operation the cost of a Gulf outfall could approach that of advanced treatment, one of the major cost elements has already been incurred since the plant already exists. Further, it has yet to be proven what level of treatment will be required by the plant to maintain a high level of water quality in the Bay. It should be noted that the determination of effluent limits is the responsibility of the Florida Department of Environmental Regulation. No indication was provided by Florida DER during the course of the EIS to suggest that the

Main Street plant could not operate at a level to protect water quality in the Bay. If that occurs in the future, other alternatives, including a Gulf outfall, would then have to be considered.

b. Comment: The EIS should also address the impact of long-term discharge of secondarily treated sewage effluents of volumes of 20 million gallons daily or more into Pensacola Bay.

Response: See response to 4.1. Also, sampling of Pensacola Bay water quality was identified at the beginning of the EIS as outside the scope of the EIS due to the responsibilities of other agencies and the time and cost of such an endeavor. The need for a comprehensive program remains, however.

5. Mr. Richard J. Hoogland, Chief, Environmental Assessment Branch, Southeast Region, National Marine Fisheries Service, Letter of June 27, 1984.

a. Comment: We believe that updating the facilities at the main street plant, including an open Gulf outfall, would be the least environmental damaging and the most long-term cost effective alternative.

Response: For the reasons stated in 4.a. above and from the preliminary analyses conducted, we find no basis for a Gulf outfall being considered "the most long-term cost-effective alternative." The Main Street plant is an advanced treatment facility. It's effectiveness can only be improved through operation of the sophisticated treatment process it contains. The EIS clearly states that a properly sited Gulf outfall could be an environmentally sound alternative. However, no data to date have given cause to remove the Main Street plant discharge.

6. Ms. Muriel W. Wagner, President, Francis M. Weston Audubon Society, Pensacola, Letter of June 27, 1984.

a. Comment: We question the conclusion that there are "few documented problems to date."

Response: The statement "few documented problems to date" refers to problems emanating from municipal wastewater facilities. Where problems have been identified by Florida DER (Bayou Marcus and Bayou Chico), the EIS has recommended action be taken and funds made available. Consistent documented problems have not been observed at other discharges to estuaries and sounds in the area. The EIS notes, however, that monitoring programs to detect such problems have been limited.

b. Comment: It is our understanding that the Santa Rosa Island sewage facility will soon be expanded. Is their NPDES permit current and valid? Is anyone monitoring Santa Rosa Sound?

Response: The Santa Rosa Island facility has a permit extending to 1989. The Sound has been monitored on an intermittent basis by the Santa Rosa Island Authority and Florida DER.

7. Mr. James W. Mitchell, State Conservationist, Soil Conservation Service, Letter of June 18, 1984.

   a. Comment: This EIS did not consider the impact that would occur to prime and important farmlands which are located in the northern upland portion of Escambia County.

      Response: Farmlands in northern portions of the county are outside the EIS study area. In the southern portion of the county, the 208 population disaggregations placed people out of low-lying areas such as wetlands and floodplains and into higher, drier areas. No EPA funds are being provided for growth anywhere in Escambia County.

8. Mr. D. T. Raynor, Environmental Director, West Florida Regional Planning Council, Letter of June 18, 1984.

   a. Comment: The(se) 208 figures do not reflect the actual populations that are being experienced and are not adequate for a study being completed in the summer of 1984.

      Response: See response to comment 3.

9. Mr. Dale Adams, Administrative Assistant, Florida Department of Natural Resources, Letter of June 26, 1984.

   a. Comment: Clarification is needed on one issue: determination of the project's impact on shellfish waters and an estimation of the size of a closed safety zone around the outfall.

      Response: The discharges available to receive funding will be treated and discharged by the Main Street plant which discharges into Class III waters. The Santa Rosa Island and Navarre Beach discharges are near Class II waters (those designated for shellfish harvesting) but Florida DER has continued to permit these discharges indicating that they are meeting Florida legislative code requirements. The Santa Rosa Island facility recently upgraded to Reliability Class I to meet requirements.

10. Mr. J. William McCartney, Executive Director, Northwest Florida Water Management District, Letter of July 17, 1984.

    a. Comment: This (EIS recommendations) conflicts with the 201 facility plans which recommend regional systems in both planning areas.

       Response: The purpose of the EIS was to evaluate the 201 Plan. The 201 Plan is not a recommended course of action until it is approved for funding. The EIS determined that criteria for receiving federal funding to build regional systems, in addition to those already in operation, were not met. See the response to comments 3.a and 4.a.

b. Comment: Lack of regional utility systems does not appear to limit growth in the coastal area. The result is a proliferation of small treatment plants in a uncoordinated, unplanned fashion without any clear long-range plan.

Response: These comments assume that small treatment systems inherently are unacceptable. Recent advances in the state-of-the-art for small community wastewater systems provide adequate treatment, often at much lower costs than conventional systems.

c. Comment: As regards the statement that wastewater management options (regional systems in this case) could support development and would be contrary to state policies, one of Governor Graham's Resource Management and Planning Committees is currently giving strong consideration to the development of regional water supply, wastewater and solid waste system in coastal Okaloosa and Walton Counties. This would indicate, at the least, that consideration of such systems is not contrary to state policy under the proper circumstances.

Response: According to comments received by Mr. Walter Kolb, Senior Governmental Analyst, Office of the Governor, "Our review found that your recommended actions are essentially in accord with relevant state goals and objectives."

E. Oral Comments and Responses

1. Hon. Joseph Reynes, Mayor, City of Gulf Breeze.

a. Comment: See the letter submitted by Mayor Reynes (Section G.) as well as the comment and response section in Section D, Number 2.

2. Mr. Richard Doyle, Perdido Key Development Association.

a. Comment: See transcript of Public Hearing (Section F.).

Response: ECUA, through its current wastewater management plans, intends to support the projected population exceeding 30,000 people.

3. Mr. David Morris, Baskerville-Donovan Engineers, Representing Navarre Beach.

a. Comment: See transcript of Public Hearing (Section F.).

Response: No response needed.

4. Member of the Press.

a. Comment: See transcript of Public Hearing (Section F.).

Response: No response needed.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

EPA Order Number: 4R-1140-TNSA

Minutes of the South Escambia and Santa Rosa Counties, Florida Wastewater Management Draft EIS Public Hearing, held on June 19, 1984, at 7:00 o'clock p.m., in the City Council Chambers on the Second Floor of the Pensacola City Hall, 330 South Jefferson Street, Pensacola, Florida.

APPEARANCES:

ROBERT C. COOPER
Environmental Protection Specialist
345 Courtland Street, NE
Atlanta, Georgia 30365

William R. Whitson
EPA Headquarters
Office of Regional Operations
Washington, D.C.

Also Present:
Norman Morrisette (not present)

HEARING CHAIRMAN COOPER: Ladies and gentlemen, I'd like to call this public hearing to order. I would like to welcome you here tonight on behalf of the United States Environmental Protection Agency.

First of all, I'd like to tell you that my name is Robert Cooper. I am the project officer on this project. I work in the NEPA Compliance Section of Region 4 in Atlanta.

With me tonight on my right is William Whitson of our Office of Regional Operations in our headquarters office in Washington, D.C.

The purpose of this hearing is to develop a record and to receive comments on the draft environmental impact statement which was recently issued relative to waste treatment facilities in the southern Escambia and Santa Rosa counties.

I want to welcome all of you to the hearing. I want you to understand that this is your hearing, and it's for the purpose of information, and I want you to feel free to participate.

If you have not filled out a card when you came in, and indicated your interest in making a statement at this hearing, I would ask you to please do so. Even if you do not wish to make a statement, you should fill out a card, because this becomes part of our permanent record and enables us to notify you, enables us to send you a copy of the final EIS when that is issued.

The environmental impact statement we are here to discuss tonight is being prepared to evaluate alternatives for waste water facilities in southern Escambia and Santa Rosa counties. The expenditure of federal funds for waste water facilities and the preparation of EIS's are authorized by the Clean Water Act and the National Environmental Policy Act, known as NEPA. The planning phase of this process results in the preparation of a facilities plan. The facilities plan prepared for this area proposed two new waste water treatment plants with extensive new treatment capacity and a new discharge pipe to the Gulf of Mexico.

The National Environmental Policy Act requires federal agencies to prepare an EIS for major federal action significantly affecting the quality of the human environment. Because of environmental complexities involving growth-related impacts to sensitive areas and water quality issues

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involved in this project, EPA made the decision to prepare the EIS on this 201 plan.

Accordingly, in June of 1980, a notice of intent to prepare an EIS was issued.

Following initiation of the EIS, existing environmental conditions in the area were evaluated. No significant adverse environmental problems were associated with the existing treatment facilities with the exception of the discharges to Bayou Chico and Bayou Marcus Creek.

In addition, no significant public health or water quality problems have been documented related to percolation ponds or on-lot systems in the area. Concurrent with the evaluation of existing conditions, projected populations and waste water flows were developed for the study area. Feasible alternatives were then developed by combining waste water service configurations with treatment and disposal options. The final set of alternatives which was evaluated in the EIS includes, first, in Escambia County, the first alternative provided for centralized waste water service with a new southwest county treatment plant. This plant would have secondary treatment with discharge by outfall to the Gulf of Mexico. This is the original 201 alternative, which included the Avondale, Pen Haven, Warrington, northwest Perdido Key and southwest Escambia service areas, with the combined through of over 7 million gallons per day.

The second alternative which was evaluated provides centralized waste water service with new treatment plants for the southwest county and Perdido Key areas. The southwest county treatment plant would have secondary treatment with discharge by land application.

The capacity of this plant would be .54 MGD with 50 percent of the area's population served. The Perdido Key treatment plant would have secondary treatment with discharge by land application. Projected capacity of this plant would be 1.7 MGD with 100 percent of the population sewered. The Warrington, Avondale, and Moreno Courts treatment plants would be phased out with flows conveyed to the Main Street plant for treatment and disposal. Centralized sewer service would be provided to the northwest area, with conveyance to the Main Street plant for treatment and disposal.

The final alternative for the Escambia County portion of the service area involved continued current waste water management practices of the use of package plants and septic tanks in southwest county, Perdido Key, and northwest county. The Warrington, Avondale and Moreno courts treatment plants would be phased out with flows conveyed to the Main Street plant for treatement and disposal.

The four alternatives were evaluated for Santa Rosa Island-Gulf Breeze Peninsula portion of the study area. Alternative one, again, was the original 201 plan alternative. This involved a new regional plant to be constructed on the eastern end of Gulf Breeze peninsula with disposal by land application at Eglin Air Force Base. The capacity of the plant would be eight million gallons we would have with secondary treatment. The plant would treat flow from Gulf Breeze, Pensacola Beach, and Navarre Beach.

The second alternative for this area involved conveyance of flows from Pensacola Beach and Gulf Breeze to the Main Street plant for treatment and disposal of flows from Navarre Beach would be treated at the existing plant with land application.

The third alternative involved expansion of the Pensacola Beach plant to 2.4 MGD with the existing level of treatment and discharge point. Class one reliability would be provided. The existing plant at Navarre Beach would remain at its current capacity.

The City of Gulf Breeze would continue treatment and disposal at the existing location, with expansion from .5 to .8 MGD. The continued use of package plants and septic tanks is projected for the Gulf Breeze peninsula.

Alternative four involves conveyance of flows from Pensacola Beach and Gulf Breeze to Pensacola Bay following treatment at Gulf Breeze. Flows from Navarre Beach would be treated at the existing plant with discharge by land application.

The alternatives described above were evaluated in terms of cost, operability, implement ability and environmental impact. The cost of the three Escambia County alternatives were $64 million for alternative one, $25 million for alternative two, and $9 million for alternative three.

The four Santa Rosa County alternatives were costed at $36 million for alternative one, $17 million for alternative two, $7.5 million for alternative three, and $10.8 million for alternative four.

Operability considerations do not eliminate any of the final alternatives. If waste water is conveyed to a regional facility rather than continuing operation of several smaller plants, both operability and reliability may be improved due to increased staff size and newness of the facility. However, no significant long-term problems have resulted from the operation of the existing facilities.

Implement ability: The Main Street plant, as well as the Avondale and Warrington facilities, are under the control of the Escambia County Utilities Authority. Therefore, no implementation problems are involved with the diversion of these flows to Main Street. The Moreno Courts treatment plant is operated by the Pensacola Housing Authority, but few implementation problems are anticipated if this authority chooses to participate in the recommended action.

Implementation of the Gulf outfall alternative would be more difficult than other options, due to uncertainties associated with siting and constructing the outfall.

In the Santa Rosa County area, the

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alternative is considered to be the most--the third alternative is considered to be the most implementable because there would be no need for coordination of facilities construction, expansion, or operation of these with the other local facilities. The implement ability of the 201 alternative is questionable, due to the lack of a suitable site for land disposal of the effluent.

Environmental impacts: Based on the environmental analysis, extensive water quality problems resulting from most existing discharges have not been documented.

The existing Avondale and Warrington treatment plants, however, are causing problems now, and will be eliminated under all the alternatives.

Further, data to assess fully the impacts of the Main Street plant on Pensacola Bay are still being collected.

The construction of new regionalized systems with capacity for significant amounts of growth could have the potential to induce environmental impacts.

The sensitive barrier island, wetland and estuarine environments would be subject to intense developmental pressure. The comprehensive land use and development controls which would be necessary to protect environmental quality are not in place. The area most likely to experience significant adverse impacts is Perdido Key, where Escambia County is projecting and encouraging a population increase of from around 3500 to more than 35,000 over the next two decades.

After the systematic evaluation of all alternatives, the following alternatives were selected as the proposed action. For Escambia County. The conveyance of flows from the Warrington and Avondale service areas to the Main Street plant is recommended. This option removes waste water discharges to Bayou Chico and Bayou Marcus Creek which will improve water quality and meet the objectives of the Florida Department of Environmental Regulation.

Further, it is recommended that the Moreno Courts effluent also be conveyed to Main Street, given the elevated nitrogen levels observed in percolation pond monitoring wells. The proximity of these ponds to Jones Swamp Creek, Bayou Chico, the direction of ground water flow toward the creek, documented water quality problems in Bayou Chico, and the proximity of the Warrington conveyance lines.

Based on current flows and conveyances from the three treatment plants recommended for action, the Main Street plant should have sufficient capacity. The proposed action is not anticipated to exceed the projected capacity of the Main Street plant and is not intended to lead to such action. EPA funding will be made available for these water quality improvement actions if within reach on the state priority list.

The continuation of current waste water management practices is recommended for the southwest county, Perdido Key, and northwest county areas. No significant water quality or public health problems have been documented or are projected in these areas, assuming applicable permitting procedures are followed.

As the density of development increases, however, setback requirements and distances between ponds will be more critical and these factors should be emphasized by DER in their permitting process.

The recommended action avoids encouraging higher population densities which would increase stress on water quality, wetlands, and the sensitive barrier island development. It is important to note that this assessment is based on current--pardon me. It is important to note that this assessment is based on the assumption that current practices are and should be adequate in the southwest, northwest, and Perdido Key areas leading to the no-action decision. This is based on the 208 population projections which are the basis for EPA decision making. If these projections are exceeded, and it is quite likely that they will be, then current waste water management practices may not be adequate for increased population levels greater than those projected by the 208 plan.

Santa Rosa County: The continuation of current waste water management practices is recommended for Santa Rosa island and the Gulf Breeze peninsula. All discharges in this area are currently meeting their effluent limits. No significant waste quality or public health problems have been documented which would justify the construction of major new facilities. The provision of regional systems with additional capacity could encourage growth and development of the sensitive barrier island environment. Expansion of existing facilities at local expense to accommodate growth is expected.

If future changes to effluent limits for Santa Rosa Sound require no discharge or very stringent treatment levels that are not cost effective to meet at each small plant, conveyance of secondary effluent to Pensacola Bay for discharge should be reconsidered. Should such a system be implemented in the future, EPA should reassess the potential for significant stimulation of development of sensitive areas in making grant participation decisions.

Pursuant to the guidelines of the President's Council on Environmental Quality, the rules and regulations of the Environmental Protection Agency with regard to preparation of EIS's, this public hearing is being held to receive comments on the draft EIS. This draft EIS is being discussed in a public forum to encourage public participation in the federal decision-making process, and to develop public understanding of federally-funded projects. In this regard, the draft EIS was made available to the public on May 3rd, 1984, and is listed in the federal register on May 11, 1984. The draft EIS comment period will extend until June 29th, 1984. The comments

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received during this evening and during the comment period following, will be part of the record.

With that in mind, we will now begin the public comment portion of the program. I would like to remind any of you who wish to speak to fill out one of the cards on the back table if you have not already done so. In order that everyone who would like to speak is given an opportunity to do so, you are requested to limit your testimony to five minutes, and if you have a written text, we would like for you to submit a copy to the panel, to enable us to follow your remarks more closely, and also to ensure that your remarks are accurately included in the record.

Members of the hearing panel may ask questions of the person presenting oral statements when it is felt necessary to clarify the nature of the substance of the comment being made. However, I would ask that the audience do not ask questions of people making comments, nor should questions be asked of the hearing panel. The reason for this is not to foreclose discussion, but to move ahead with the purpose of the hearing, which is to receive comments.

All statements made here tonight will be responded to in the final environmental impact statement.

Before you make your statement, please identify yourself by name, and if appropriate, the group or organization which you represent. Please make your comments at the microphone available, to ensure that your remarks are audible to the audience and the court reporter, as well as recorded on our tape.

Okay, we will now begin. As of now, I only have one person who wishes to comment. Joe Raines, Gulf Breeze?

(Reynes)
MR. RAINES: You can tell I'm a politician because I'm going to put on my coat first, right, guys?

I'm going to be very, very brief, because I notice the ten minutes for your introductory remarks have stretched to 25. The City of Gulf Breeze will, in fact, send you a letter inside the period.

THE COURT: Okay.

(Reynes)
MR. RAINES: We do want to call your attention to a few things.

One, your population figures for the City of Gulf Breeze are grossly incorrect and we will tell you what they are and where you can find them. I want to thank you for the opportunity to allow us here, but I thought the EIS was dated, and I thought it was dated to what was going on around here in 1980, and I know that you have some constraints and we do, too, but I wanted you to be aware that we in local government need systems that make sense economically, that we can afford. The days of the big grants and Uncle Fed funding are long gone. We have to support our systems locally, with rare exception.

And then the other thing that I thought was apparent, and I don't know who to blame and maybe there isn't any blame, is I felt that you tie this to old technologies, and I personally feel and I think there are others in the area that are interested in what's going to happen to waste water in the future, that there are some technological changes coming here in the Gulf Coast that will be affordable, that will be permitable and one of they will I'll just throw out is deep well injection. I think that's coming. I don't see that here, and I'm a little concerned about it. As I expect Uncle Fed, in their environmental analysis, to be way in front of the local folks.

Thank you very much.

HEARING CHAIRMAN COOPER: Okay, thank you. As I said, we will respond specifically to all comments made here in the final impact statement. That is the only person we have here--we have a card on who said they wanted to speak. Is there anyone else in the audience who wishes to make a statement?

MR. DOYLE: I am Richard Doyle, and I live on Perdido Key and I represent the Perdido Key Development Association, and there is just one figure in this document that leaps out at us, is the projected population in the next two decades at Perdido Key as 36,000 and small change, and the preceding statement says Escambia County is encouraging this development. Believe me, we put a great deal of effort into controlling this development. We started with the water tap restrictions and control, and we've put a lot of effort into the waste water, which brings me here, which is a limiting factor, but we wonder who is the elements of Escambia County that are, that is encouraging this runaway development of a thousand percent in two decades.

HEARING CHAIRMAN COOPER: Anyone else wish to comment?

MR. MORRIS: My name is David Morris. I'm with Baskerville-Donovan Engineers, and I am here representing Navarre Beach as their engineer, and in reviewing the report briefly, I noticed that the information contained in the report in reference to Navarre Beach is outdated. We do have a permit to expand the plant to .9 MGD from the .45 MGD that's in the report and in study of secondary treatment, we're essentially an advanced waste treatment plant down there, so I would like to see the report updated to reflect this information, the discharge to Santa Rosa sound.

HEARING CHAIRMAN COOPER: Would you mind sending us, at the address listed in the EIS, a copy of your new permit, and the treatment, the level of treatment, the type of treatment that you are now using, just to be sure we have that correct?

MR. MORRIS: I sure will. Thank you.

HEARING CHAIRMAN COOPER: Anyone else? Okay, well, if--

MEMBER OF THE PRESS: Could the press ask a question or two?

HEARING CHAIRMAN COOPER: Go right ahead.

MEMBER OF THE PRESS: What happens to the

EIS now? What's the next step in the process, and who eventually approves the recommended suggested changes?

HEARING CHAIRMAN COOPER: Okay, after the comment period is over on the 29th of June, we will specifically answer each comment and prepare the final EIS. The regional administrator of Region 4 in Atlanta, Charles Jeter, whose name appears on the front of the draft statement, will also issue the final statement. As you know, I mean as far as effect, this affects potential federal funding.

MEMBER OF THE PRESS: Yes.

HEARING CHAIRMAN COOPER: As you know, it does not, you know, everything we recommend in here doesn't have to happen. This relates most directly to federal funding--

MEMBER OF THE PRESS: Yes.

HEARING CHAIRMAN COOPER: --to what we say is eligible for federal funding, but that is the principal part of this, and then after this is finalized, the utilities authority will be able to get funding for, if this decision is not changed, the utilities authority would be able to get funding for Avondale and Warrington, or for most specifically for Warrington, and as far as other areas go, it would mainly be local planning would take over, as has already been happening and the ball would be carried there.

MEMBER OF THE PRESS: All right. Thank you.

HEARING CHAIRMAN COOPER: Any other questions?

Okay, I would like to remind you all that the public record will remain open until June 29th. All written comments received will be considered as part of the record, and should be forwarded to EPA at the address listed in the hand-out.

We would like to thank each of you for participating tonight, and the comments you have made and all written comments which we receive during the comment period will be specifically responded to in the final EIS.

Thank you very much.

STATE OF FLORIDA)
) SS.
COUNTY OF ESCAMBIA)

I, J. BRYAN JORDAN, Shorthand Reporter and Notary Public in and for the State of Florida, do hereby certify:

That the I was present at the foregoing hearing at the time and place therein specified;

That the said proceeding was taken before me as a Notary Public at the said time and place and was taken down in shorthand writing by me;

That the said proceeding was thereafter under my direction transcribed into computer-assisted transcription, and that the foregoing transcript constitutes a full, true, and correct report of the proceedings which then and there took place;

That I am a disinterested person to the said action.

IN WITNESS WHEREOF, I have hereunto subscribed my hand and affixed my official seal this 28th day of June, 1984.

J. Bryan Jordan

J. BRYAN JORDAN, Shorthand Reporter
and Notary Public,
State of Florida at Large.

My commission Expires:
March 15, 1988.

Advisory Council On Historic Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

JUN1 1984

AY 30 19

Mr. Robert C. Cooper
Project Officer, NEPA Compliance Section
Region IV
Environmental Protection Agency
345 Courtland Street NE.
Atlanta, GA 30365

REF: Wastewater Management Plan, South Escambia and Santa Rosa Counties, Florida

Dear Mr. Cooper:

We have received and reviewed the Draft Environmental Impact Statement (DEIS) for the referenced proposal. Since the DEIS contains commitments from EPA to ensure that archeological survey work will be conducted in specific sewer line construction corridors and at construction sites specified in the selected alternative plan, we have no substantive comments. EPA should continue to consult with the Florida State Historic Preservation Officer, and prior to any Step III construction, follow the remaining steps in the Council's regulations (36 CFR Part 800) to ensure compliance with the National Historic Preservation Act, as amended.

Thank you for the opportunity to comment. If you have questions about these comments or wish assistance, please contact Staff Archeologist Ronald D. Anzalone at 202-786-0505 (an FTS number).

Sincerely,

Don L. Klima
Chief, Eastern Division
of Project Review

United States
Department of
Agriculture

Soil
Conservation
Service

State Office
401 S. E. First Avenue
Gainesville, Florida 32601

June 18, 1984

Sub: ECOL SCI - Environmental Assessment

To: Robert C. Cooper
Project Officer
EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

TAL ASSESSMENT BRANCH
RECEIVED
JUN 20 1984
ON IV
GA.

We have reviewed the Draft Environmental Impact Statement on South Escambia and Santa Rosa Counties, Florida Wastewater Management.

This report makes good use of Soil Conservation Service soils data and incorporates elements which reflect federal policies concerning development of floodplain and wetland areas. The methodology chosen tended to, in their words, "allocate future growth toward the northern upland portions of the counties..." (p. 11-7). This EIS did not consider the impact that would occur to prime and important farmlands which are located in the northern upland portion of Escambia County.

I believe this impact should be considered.

James W. Mitchell
State Conservationist

The Soil Conservation Service
is an agency of the
Department of Agriculture

DEPARTMENT OF THE AIR FORCE
REGIONAL CIVIL ENGINEER, EASTERN REGION (HQ AFESC)
526 TITLE BUILDING, 30 PRYOR STREET, S.W.
ATLANTA, GEORGIA 30303

REPLY TO
ATTN OF: ROV4

7 June 1984

SUBJECT: Environmental Impact Statement (EIS), South Escambia and Santa Rosa Counties, Florida, Wastewater Management

TO: U. S. Environmental Protection Agency
Region IV
Attn: Mr. Robert C. Cooper
Project Officer
NEPA Compliance Section
345 Courtland Street, N.E.
Atlanta, Georgia 30365

The Air Force Regional Civil Engineer - Eastern Region, as the responsible Air Force office for intergovernmental activities in Region IV, has reviewed the subject report and offers no comments. Our Point of Contact is Mr. Dan Lane, commercial telephone (404) 221-6776.

Thomas D. Sims
THOMAS D. SIMS
Chief
Environmental Planning Division

cc: USAF/LEEVX
AFESC/DEMV
AD/DEEV

ASSESSMENT BRANCH
[illegible]
1984
[illegible]
REGION IV
ATLANTA, GA.

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P. O. BOX 2288
MOBILE, ALABAMA 36628

REPLY TO
ATTENTION OF:

June 22, 1984

Environmental Quality
Section

Mr. Robert C. Cooper
Project Officer
Environmental Assessment Branch
Environmental Protection Agency
345 Courtland Street
Atlanta, Georgia 30365

Dear Mr. Cooper:

We have reviewed the Draft Environmental Impact Statement for South Escambia and Santa Rosa Counties, Florida, Wastewater Management, as requested by letter of May 3, 1984. We have no comments on the document.

Thank you for the opportunity to comment on this draft document.

Sincerely,

Willis E Ruland

Willis E. Ruland
Chief, Environment and Resources
Branch

JUN 25 1984
EPA-REGION IV
ATLANTA, GA.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Washington, D.C. 20230

OFFICE OF THE ADMINISTRATOR

July 5, 1984

ENVIRONMENTAL ASSESSMENT BRANCH
RECEIVED
JUL 6 1984
-REGION IV
ANTA, GA.

Mr. Robert C. Cooper
Project Officer
Environmental Assessment Branch
Environmental Protection Agency
345 Courtland St., NE
Atlanta, GA 30365

Dear Mr. Cooper:

This is in reference to your draft environmental impact statement for South Escambia and Santa Rosa Counties, Florida wastewater management. Enclosed are comments from the National Oceanic and Atmospheric Administration.

We hope our comments will assist you. Thank you for giving us an opportunity to review the document. We would appreciate receiving four copies of the final environmental impact statement.

Sincerely,

Joyce M. Wood

Joyce M. Wood
Chief, Ecology and
Conservation Division

Enclosure

DC:das

U.S. DEPARTMENT OF COMMERCE
National Marine Fisheries Service
Southeast Region
9450 Koger Boulevard
St. Petersburg, FL 33702

June 27, 1984 F/SER11/EK
813-893-3503

Mr. Robert C. Cooper
Project Officer
Environmental Assessment Branch
Environmental Protection Agency
Region IV
345 Courtland St. NE
Atlanta, GA 30365

Dear Mr. Cooper:

The National Marine Fisheries Service has received the draft environmental impact statement, South Escambia and Santa Rosa Counties, Florida Wastewater Management for review and comment.

We have reviewed the subject document and offer the following general comments.

General Comments

In our opinion, the document is poorly written, is lacking in sound biological or scientific data, and does not fully consider all available outfall alternatives.

We believe that updating the facilities at the main street plant, including an open Gulf outfall, would be the least environmental damaging and the most long-term cost effective alternative. In this regard, full consideration should be given to these alternatives prior to selection of a "Preferred Alternative."

Sincerely yours,

Richard J. Hoogland
Chief, Environmental Assessment Branch

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Washington, D.C. 20230

THE ADMINISTRATOR

July 12, 1984

Mr. Robert C. Cooper
Project Officer
Environmental Assessment Branch
Environmental Protection Agency
345 Courtland St., NE
Atlanta, GA 30365

Dear Mr. Cooper:

Enclosed are additional comments from the National Oceanic and Atmospheric Administration on your draft environmental impact statement for South Escambia and Santa Rosa Counties, Florida, wastewater management.

We hope our comments will assist you. Thank you for giving us an opportunity to review the document.

Sincerely,

Thomas E Bigford

Joyce M. Wood
Chief, Ecology and
Conservation Division

Enclosure

DC:das

10TH ANNIVERSARY 1970-1980
National Oceanic and Atmospheric Administration
A young agency with a historic
tradition of service to the Nation

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Washington, D.C. 20230

N/MB21:VLS

Rec'd 7/11/84
EC:dar

July 10, 1984

TO: PP2 - Joyce M. Wood

FROM: N - Paul M. Wolff

SUBJECT: DEIS 8405.09 - South Escambia and Santa Rosa Counties, Florida, Wastewater Management (Environmental Protection Agency)

The subject statement has been reviewed within the areas of the National Ocean Service's (NOS) responsibility and expertise, and in terms of the impact of the proposed action on NOS activities and projects.

Our Office of Oceanography and Marine Assessment (OMA) questioned the writer's application of the term "tidal surge" to the discussion of sea level changes arising from storms and hurricanes (page III-7, first paragraph). It is suggested that the term "tidal surge" be replaced with "storm surge" because the term "tidal" refers to effects caused by the astronomic tide producing forces.

In addition, our Office of Ocean and Coastal Resource Management (OCRM) has been in contact with Mr. Walt Kolb of the Florida State Department of Environmental Regulation. Based on a preliminary review of the DEIS, Mr. Kolb states that the project appears consistent with the State CZM program.

DC
7/11

United States Department of the Interior

OFFICE OF ENVIRONMENTAL PROJECT REVIEW

Southeast Region / Suite 1360
Richard B. Russell Federal Building
75 Spring Street, S.W. / Atlanta, Ga. 30303

Telephone 404/221-4524 · FTS: 242-4524

JUN 1 8 1984

ENVIRONMENTAL ASSESSMENT
RECEIVED
JUN 20 1984
EPA-REGION IV
ATLANTA, GA.

ER-84/625

Robert C. Cooper, Project Officer
NEPA Compliance Section
Environmental Protection Agency
345 Courtland Street, NE
Atlanta, Georgia 30365

Dear Mr. Cooper:

The Department of the Interior has reviewed the draft Environmental Impact Statement (EIS) on Wastewater Management for South Escambia and Santa Rosa Counties, Florida, and has the following comments.

The EIS adequately addresses the details and economics of an array of project plans and alternatives; however, the statement lacks a comprehensive analysis of the alternative of extending and relocating the Main Street outfall to the Gulf of Mexico with a discharge of secondarily treated effluent. A Fish and Wildlife Service letter dated, June 15, 1981, from the Ecological Services field office in Panama City to your agency specifically addressed the need for the above analysis. We believe the EIS should contain a complete environmental and economic analysis of the Gulf outfall alternative.

The EIS should also address the impact of long-term discharge of secondarily treated sewage effluents of volumes of 20 million gallons daily or more into Pensacola Bay. This discharge would likely jeopardize the biological recovery and future productivity within the bay, since other pollution sources, such as massive urban stormwater runoff, will continue to increase.

According to the EIS, Federal funds will only be provided to divert the Avondale and Warrington service area effluents to the Main Street Plant. Funds will not be made available to upgrade the currently operating secondary treatment system at the plant. Advanced wastewater treatment techniques and/or tertiary treatment techniques are costly. However, in view of the impacts of all pollution sources now entering and that will enter the Pensacola Bay system, such treatment levels may be required in the future to assure adequate water quality within the Bay. Therefore, we recommend that in the analysis referred to above, one section include a comparison of the costs to discharge secondarily treated effluent to the Gulf of Mexico to the costs for advanced wastewater or tertiary treatment with continued discharge to Pensacola Bay. The long-term costs of advanced wastewater or tertiary treatment could far exceed the initial costs of installation of a Gulf outfall. The significant fish and wildlife resources that would be favorably impacted by this alternative should also be considered in this analysis.

Thank you for this opportunity to provide comments on the draft document. We would like to discuss our concern with you prior to preparation of the final EIS.

Sincerely yours,

James H. Lee

James H. Lee
Regional Environmental Officer

STATE OF FLORIDA **FLORIDA DEPARTMENT OF AGRICULTURE & CONSUMER SERVICE**

DOYLE CONNER, COMMISSIONER * DIVISION OF FORESTRY / XXXXXXXXXXXXXX / TALLAHASSEE XXXXX
3125 Conner Blvd. 32301

RECEIVED
MAY [illegible] 1984

DATE: May 21, 1984

Mr. Walter Kolb
Office of Planning and Budgeting
Office of the Governor
The Capitol
Tallahassee, Florida 32301

Dear Walt:

We have reviewed the EIS referral transmitted in your letter of May 9 on SAI Project # *See Below and are advising you that the Division of Forestry has no adverse comment.

If we can be of further assistance, please give us a call.

Sincerely yours,

George

George L. Reinert
Chief, FREP Bureau
488-6591

*FL 8405071185E - South Escambia and Santa Rosa Counties
Florida Wastewater Management

STATE OF FLORIDA
DEPARTMENT OF COMMUNITY AFFAIRS
DIVISION OF LOCAL RESOURCE MANAGEMENT

BOB GRAHAM
Governor

JOHN M. DeGROVE
Secretary

MAY 25 1984

5-22-84

Mr. J. Ron Fahs, Director
Intergovernmental Coordination
Executive Office of the Governor
The Capitol
Tallahassee, Florida 32301

Dear Ron: SUBJECT: FL 8405071185E

In accordance with the prescribed project review procedures, the Department of Community Affairs has completed its staff review of the cited document.

We have determined that the application does not duplicate any of the Department's plans or programs, and that the substance of the application is not inconsistent with the Department of Community Affairs' principles and policies.

If you have any questions concerning our review of this project, please do not hesitate to call.

Sincerely,

George L. Gould

George L. Gould
Community Assistance Consultant

July 6, 1984

Mr. Ron Fahs, Coordinator
State Clearinghouse
Executive Office of the Governor
The Capitol
Tallahassee, Florida 32301

Re: C1205891010 (Step 1) - South Escambia/Santa Rosa Counties
Facilities Plan
Environmental Impact Statement

Dear Mr. Fahs:

The Department of Environmental Regulation has re-evaluated the South Escambia/Santa Rosa County Wastewater Management Draft Environmental Impact Statement. Based on recent conservations within the department and other state governmental agencies, it has been determined that the plan is consistent with the Florida Coastal Management Program. The department does not have any adverse comments on the Environmental Impact Statement.

If you have any questions or require further information, please call Mr. George Aase at 904/488-8163.

Sincerely,

David W. York, Ph.D., P.E., Administrator
Facilities Planning Section
Bureau of Wastewater Management and Grants

DWY/gad

cc: Robert C. Cooper - EPA/Atlanta
John Outland - DER
Robert Kriegel - DER/Pensacola
Walt Kolb - Governor's Office

Reproduced from best available copy.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301-8241

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

May 18, 1984

Mr. Robert C. Cooper, Project Officer
Environmental Assessment Branch
EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Re: DEIS for South Escambia and Santa Rosa Counties, Florida

Dear Mr. Cooper:

Because the Preferred Alternative is: "No action", for Santa Rosa County (the only area for which application by land spreading had been considered), and because the Preferred Alternative for Escambia County is secondary treatment followed by ocean outfall, the Groundwater Section has no adverse comment at this time regarding subject document.

Sincerely,

Donald S. Kell

Donald S. Kell
Groundwater Section

DSK/ek

ENVIRONMENTAL ASSESSMENT BRANCH
RECEIVED
MAY 23 1984
EPA-REGION IV
ATLANTA, GA.

BOB GRAHAM
Governor
GEORGE FIRESTONE
Secretary of State
JIM SMITH
Attorney General
GERALD A. LEWIS
Comptroller
BILL GUNTER
Treasurer
DOYLE CONNER
Commissioner of Agriculture
RALPH D. TURLINGTON
Commissioner of Education

State of Florida
DEPARTMENT OF NATURAL RESOURCES

DR. ELTON J. GISSENDANNER
Executive Director
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard, Tallahassee, Florida 32303

June 26, 1984

MEMORANDUM

TO : Walt Kolb, Senior Governmental Analyst
Office of Planning and Budgeting

FROM : Dale Adams, Administrative Assistant
Division of Resource Management

SUBJECT: Draft EIS for Escambia and Santa Rosa County Wastewater
Management, FL 8405071185E

I have reviewed the attached report and have an overall favorable view on it. The proposed action is intended to address the increasing demands on wastewater facilities and make system improvements. This is a positive approach rather than proposing no action to a developing problem. In this sense, the project would be consistent with the Department's responsibilities under CZMP, except clarification is needed on one issue:

> Determination of the project's impact on shellfish waters and an estimation of the size of a closed safety zone around the outfall.

While the purpose of this project is to improve wastewater management, I did not see the above issue specifically addressed. Prior to a final sign-off, I would like clarification on this issue.

JDA/ljh

FLORIDA DEPARTMENT OF STATE
George Firestone
Secretary of State
DIVISION OF ARCHIVES,
HISTORY AND RECORDS MANAGEMENT
The Capitol, Tallahassee, Florida 32301-8020
(904) 488-1480

JUN 21 1984

June 11, 1984

In Reply Refer to:

Mr. Frederick P. Gaske
Historic Sites Specialist
(904) 487-2333

Mr. Walter O. Kolb
Division of State Planning
Department of Administration
Office of the Governor
The Capitol
Tallahassee, Florida 32301

RE: Your Memorandum of May 9, 1984
Cultural Resource Assessment Request
SAI FL8405071185E; Draft Environmental Impact Statement
for Proposed Wastewater Management Plan, South Escambia
and Santa Rosa Counties, Florida

Dear Mr. Kolb:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Procedures for the Protection of Historic and Cultural Properties"), we have reviewed the above referenced project for possible impact to archaeological and historical sites or properties listed, or eligible for listing, in the National Register of Historic Places. The authorities for these procedures are the National Historic Preservation Act of 1966 (Public Law 89-665) as amended by P.L. 91-243, P.L. 93-54, P.L. 94-422, P.L. 94-458 and P.L. 96-515, and Presidential Executive Order 11593 ("Protection and Enhancement of the Cultural Environent").

In our letter of December 14, 1977 (see enclosure), we reviewed the potential impact of the above referenced project to archaeological and historical sites and properties listed, or eligible for listing, in the National Register of Historic Places, or otherwise of national, state or local significance. In this letter, we identified those areas within the project area deemed to contain archaeological and historic sites, and recommended that these areas be subjected to a systematic, professional archaeological and historic survey prior to the initiation of ground disturbing activities.

On page III-49 of the above cited document, it is stated that:

> Potential disruption of historic and archaeological resources from any new construction can be avoided or reduced by conducting an archaeological survey of the conveyance line corridors and construction sites prior to construction. Identified resources can then be removed from the site or avoided.

Additionally, on page IV-1, it is stated that "archaeological resources surveys will be conducted where necessary to assure these resources are adequately protected".

Once the resultant survey reports have been received by this office, we will then be able to complete our review of the project's impact on significant archaeological and historic resources. In the event that significant cultural resources are located during the course of these surveys, it will be the recommendation of this office that those sites be avoided. If avoidance is not possible, then other appropriate mitigation would be recommended to reduce adverse impacts on these cultural resources.

If you have any questions concerning our comments, please do not hestiate to contact us.

Your interest and cooperation in helping to protect Florida's archaeological and historical resources are appreciated.

Sincerely,

Louis D. Tesar
for George W. Percy
State Historic
Preservation Officer

GWP/Gkp

Enclosure

cc: Robert C. Cooper

STATE OF FLORIDA
Department of State
THE CAPITOL
TALLAHASSEE 32304

BRUCE A. SMATHERS
SECRETARY OF STATE

ROBERT WILLIAMS, DIRECTOR
DIVISION OF ARCHIVES, HISTORY, AND
RECORDS MANAGEMENT
(904) 488-1480

December 14, 1977

IN REPLY REFER TO:

Mr. James R. Burkhalter
Theta Analysis, Incorporated
2100 Olive Road
Pensacola, Florida 32504

Re: November 10, 1977 Letter and Subsequent Communications
South Escambia-Santa Rosa Counties 201 Facilities Plan
Escambia and Santa Rosa Counties, Florida

Dear Mr. Burkhalter:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Procedures for the Protection of Historic and Cultural Properties"), we have reviewed the above referenced project for possible impact to archaeological and historical sites or properties listed, or eligible for listing, in the National Register of Historic Places. The authorities for these procedures are the National Historic Preservation Act of 1966 (Public Law 89-665) as amended by P.L. 91-243, P.L. 93-54, P.L. 94-422, and P.L. 94-458, and Presidential Executive Order 11593 ("Protection and Enhancement of the Cultural Environment").

A review of the Florida Master Site File indicates that four archaeological sites (8SR11, 8SR36, 8SR61, and 8SR64) are recorded for the Naval Live Oaks portion of Gulf Islands National Seashore in an area that may be impacted by the installation of the proposed pressure sewer pipe line unless it is placed within the existing U.S. Highway 98 prism. In addition, another four archaeological sites (8SR16, 8Sr26, 8Sr31, and 8Sr32) are located along the east side of East Bay within the area of the proposed pressure sewer pipe line. However, much of the area to be impacted by implementation of the proposed 201 Facilities Plan has never been subjected to a systematic, professional survey for such sites. For this reason, the lack of recorded sites is not considered significant Since data from environmentally similar areas which have been surveyed indicate that the density of historic and archaeological sites, especially the latter, may be quite high in the selected physiographic areas within the project vicinity, it is the opinion of this office that there is a reasonable probability of project activities impacting one or more sites of National Register quality. While it is reported that "most of the pipes to be installed in Santa Rosa County are to be placed within established presently-cleared road rights-of-way", it is noted that only the central road prisms are considered completely disturbed. Thus, while past clearing of the area lying between the prism and the outer edge of the road rights-of-way may have already exposed and superficially disturbed previously unreported archaeological sites, significant undisturbed portions may yet remain within the zone to be impacted by the proposed project.

Therefore, it is our recommendation that, prior to any ground disturbing activities, those areas with a reasonable archaeological site occurrence probability to be impacted by the present project be subjected to a professional archaeological and historical survey (see map attachment). The general location of those areas recommended for survey within the present South Escambia-Santa Rosa Counties 201 Facilities Plan area include:

1. The northern edge of the Big Lagoon State Recreation Area;
2. The south shoreline of the northeast end of Perdido Bay;
3. The area adjacent to SR292 and north of the Pensacola Naval Air Station;
4. The pressure sewer line on the south side of U.S. Highway 98 through the Naval Live Oaks portion of Gulf Islands National Seashore. (Note: Its proximity to known sites is mentioned above);
5. The short stretch along U.S. Highway 98 which crosses the intermittent creek drainage midway between (4) and (6);
6. The pressure sewer pipe line area(indicated on the map) bordering U.S. Highway 98 and proceeding northward from there, including the Peninsula Wastewater Treatment Plant, to the proposed Eglin Spray Irrigation site;

7. The area along U.S. Highway 98 and west of Navarre, where the highway crosses a series of intermittent drainage creeks;

8. The area along U.S. Highway 98 east from Navarre bridge to Wynnehaven Beach;

9. The proposed 920-acre Eglin Spray Irrigation site;

10. The area from and including the Pace Wastewater Treatment Plant to the Pace Spray Irrigation site;

11. The proposed 239-acre Pace Spray Irrigation site; and,

12. Any new lines placed in the Blackwater Bay Peninsula area. (Note: The plans for this area have not yet been developed and were not available for study).

The remaining pipe line routes within the present project need not be surveyed because (1) they are planned for installation in already disturbed road prisms or (2) they are planned for areas having a very low probability of site occurrence.

The purpose of this archaeological and historical survey will be to identify properties potentially eligible for listing in the National Register of Historic Places, and to determine what impact, if any, the present project will have on them. If it is determined that the project will adversely impact a site deemed eligible for listing in the National Register, it will be necessary to avoid or mitigate the adverse impact through a professionally capable agency.

If you have any questions about our comments, or about federal historic preservation regulations, please feel free to contact us.

Your interest and cooperation in preserving Florida's historic resources are appreciated.

Sincerely,

L. Ross Morrell

L. Ross Morrell,
Deputy State Historic
Preservation Officer

LRM:Teh

enclosure (map)

V-51

Florida Department of Transportation

BOB GRAHAM
GOVERNOR

Haydon Burns Building, 605 Suwannee Street, Tallahassee, Florida 32301-8064, Telephone (904) 488-8541

PAUL N. PAPPAS
SECRETARY

RECEIVED
MAY [illegible] 1984

May 16, 1984

file

Mr. Walter O. Kolb
Office of the Governor
The Capitol
Tallahassee, Florida 32301

Dear Walter:

Our review of the EPA Draft, Environmental Impact Statement, for South Escambia and Santa Rosa Counties, Florida Wastewater Management, indicates no adverse impact on this Department's transportation facilities.

Sincerely,

Ed McNeely

Ed McNeely, Administrator
Surface Transit Planning

EM:tk

FLORIDA GAME AND FRESH WATER FISH COMMISSION

C. TOM RAINEY D.V.M.
Chairman, Miami

THOMAS L. HIRES SR.
Vice-Chairman, Lake Wales

WILLIAM G. BOSTICK JR.
Winter Haven

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MRS. GILBERT W. HUMPHREY
Miccosukee

ROBERT M. BRANTLY, Executive Director
F.G. BANKS, Assistant Executive Director

FARRIS BRYANT BUILDING
620 South Meridian Street
Tallahassee, Florida 32301
(904) 488-1960

June 14, 1984

RECEIVED
JUN 18 1984

Mr. Walt Kolb
Office of the Governor
The Capitol
Tallahassee, FL 32301

FILE →

RE: FL8405071185E, DEIS
S. Escambia & Santa Rosa
Counties, FL Wastewater
Management

Dear Mr. Kolb:

The Office of Environmental Services has reviewed the referenced project and has no comments.

If we may offer further assistance, please contact us.

Sincerely,

Douglas B. Bailey

Douglas B. Bailey
Assistant Director,
Office of Environmental
Services

DBB/ms
ENV. 1-3-2

Northwest Florida
Water Management District

Route 1, Box 3100, Havana, Florida 32333

J. William McCartney
Executive Director

(904) 487-1770

July 17, 1984

Mr. Robert C. Cooper
Project Officer
NEPA Compliance Section
EPA, Region IV
Atlanta, GA 30365

Dear Mr Cooper:

Draft EIS for South Escambia and Santa Rosa Counties, Florida

I understand that the deadline for comments is past; however we were not involved in the process and were unaware of all recent project activities until after the fact. I feel this was unfortunate because of the extensive studies (groundwater, surface water, geology, demography, public water systems, wetlands, effects of percolation ponds, etc.) we have carried out in the project area for many years. As such, we would have been pleased to serve on an advisory committee, or in some other capacity. I understand the staff of the West Florida Regional Planning Council suggested this numerous times in meetings with the project staff.

The following comments are submitted for your consideration:

(1) The report divided southern Escambia and Santa Rosa counties into two broad planning areas, including: 1) Pensacola/Escambia County and 2) Santa Rosa Island/Gulf Breeze. A total of six alternatives were evaluated for planning unit 1 and eight alternatives for planning unit 2. In both cases, the NO ACTION alternative was preferred by EPA. Thus, no expansion or movement towards regional systems is recommended. This conflicts with the 201 facility plans which recommend regional systems in both planning areas. Chapter IV of the EIS entitled "Selection and Description of Referred Alternatives" provides the following explanation for selecting the NO ACTION alternative:

DAVAGE RUNNELS
Chairman - Destin

WILLIAM C. SMITH
Vice Chairman - Tallahassee

MARION TIDWELL
Sec./Treas. - Chumuckla

TOM S. COLDEWEY
Port St. Joe

W. FRED BOND
Pensacola

CANDIS M. HARBISON
Panama City

R. L. PRICE, JR.
Graceville

DR. LOUIS J. ATKINS
Blountstown

BLUCHER B. LINES
Quincy

> "No Action is the alternative selected for the areas outside the Avondale, Warrington and Moreno Courts service areas: Southwest Escambia, Perdido Key, Santa Rosa Island and the Gulf Breeze Peninsula. This decision is based on two major determinants. First, portions of these areas are sensitive to development due to their proximity to 100-year floodplains, wetlands or estuaries. While wastewater management options in these areas might not promote development in all situations, such options could act to support development and associated populations in sensitive areas. This would be contrary to state and federal policies and regulations that are intended to protect such areas. Second, few water quality, ecological or public health problems have been documented to date. Some areas might be able to receive funding in the future if such problems develop. Proper planning, however, should prevent these problems from developing."

The first "determinant" is difficult to defend based on past experience. Lack of regional utility systems does not appear to limit growth in the coastal area. The result is a proliferation of small treatment plants in a uncoordinated, unplanned fashion without any clear long-range plan. The second determinant provides funds to alleviate problems as they occur. In the end, a reactive approach such as this will be more costly than careful long-term planning. It also provides solutions to problems only after some environmental damage has occurred.

(2) As regards the statement that wastewater management options (regional systems in this case) could support development and would be contrary to state policies, one of Governor Graham's Resource Management and Planning Committees is currently giving strong consideration to the development of regional water supply, wastewater and solid waste system in coastal Okaloosa and Walton counties. This would indicate, at the least, that consideration of such systems is not contrary to state policy under the proper circumstances.

Sincerely,

J. William McCartney
Executive Director

JWMc/mc

STATE OF FLORIDA
Office of the Governor
THE CAPITOL
TALLAHASSEE 32301

BOB GRAHAM
GOVERNOR

July 6, 1984

AIR [illegible]
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REGION IV
ATLANTA, GA.

Mr. Robert C. Cooper
Project Officer, NEPA Compliance Section
EPA, Region IV
345 Courtland Street, NE
Atlanta, Georgia 30365

Dear Mr. Cooper:

Reference your request, this Office reviewed and circulated for State review your Draft Environmental Impact Statement for South Escambia and Santa Rosa Counties, Florida, Wastewater Management. The document addresses proposed construction of wastewater facilities for two Florida counties. Several alternatives for wastewater management are evaluated.

Recognizing that Florida's west Gulf coast area is environmentally sensitive and subject to considerable growth pressures, Governor Graham recently appointed a Resources Planning and Management Committee. This Committee is examining growth induced problems in the adjacent counties of Okaloosa and Walton. Escambia and Santa Rosa county's coastal areas may be subject to study by this Committee in the near future.

Our review found that your recommended actions are essentially in accord with relevant state goals and objectives. The Departments of Environmental Regulation and Natural Resources find your proposals to be consistent with their statutory responsibilities and those statutes as defined in the federally approved Florida Coastal Management Program. As appropriate, we request that you respond to the concerns identified in the attached letters from the Departments of Environmental Regulation, Natural Resources and State.

Thank you for the opportunity to review and comment on this draft document. We appreciate you granting this

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Office our request for additional review time.

Sincerely,

Walter O. Kolb

Walter O. Kolb
Sr. Governmental Analyst

WOK/jkc

cc: George Reinert
Ed McNeely
George Percy
Dale Adams
David York
Douglas Bailey
George Gould
Deborah Walker
Betty Rosser

MAYOR
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COUNCILMEN
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City of Gulf Breeze

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June 26, 1984

Mr. Robert C. Cooper, Project Officer
Environmental Assessment Branch
EPA, Region IV
345 Courtland Street, N. E.
Atlanta, Georgia 30365

Dear Sir:

Thank you for the opportunity to comment on the Environmental Impact Statement both at the Public Hearing and in writing.

We question the population figures on page II-9. In 1980 the entire city population was less than 5,500 (census) and about 600 living units were served by sewer.

While many of the alternatives are solutions local governments can "live with" in terms of real solutions my perception was that these alternatives "froze" technology to what was possible in the past decade. Please let us keep our minds open to current and future technologies.

Sincerely,

Joseph Reynes

Joseph Reynes
Mayor

JR:msr

Board of County Commissioners

Escambia County, Florida

223 PALAFOX PLACE
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PHILLIP M. (PHIL) WALTRIP, DISTRICT ONE
KENNETH J. KELSON, DISTRICT TWO
WILLIE J. JUNIOR, DISTRICT THREE
MAX L. DICKSON, DISTRICT FOUR
GRADY ALBRITTON, DISTRICT FIVE

RODNEY L. KENDIG, COUNTY ADMINISTRATOR

June 15, 1984

Mr. Robert G. Cooper
Project Officer,
NEPA Compliance Section
EPA, Region IV
345 Courtland Street, N.E.
Atlanta, GA 30365

Dear Mr. Cooper:

After reviewing the draft Environmental Impact Statement (EIS) for the South Escambia and Santa Rosa Counties, Florida Wastewater Management, prepared by the U.S. Environmental Protection Agency (EPA); the following comments are offered:

1. The use of 208 population projections as a basis for EPA decision making would seem to be erroneous. These projections were developed in 1976 and 1977 and are now outdated and without validity.

2. The Land Management Mechanisms in the EIS Study Area, Table III-1, pg. III-19 of the EIS document are inaccurate for Escambia County. Escambia County has P.U.D. provisions, an Estuarine Setback on Perdido Key, and Buffer Zone Requirements.

3. Under Solid Waste Disposal, pg. III-27; Klondike Landfill is no longer in use, the Beulah Landfill will no longer accept sludge after June 25, 1984, and the Perdido Landfill (a 424 acre tract north of Interstate 10) has been in operation since July, 1981.

4. In several instances the water systems in Escambia County are referred to as the City of Pensacola Water System and the Escambia County Water System. These two systems have been incorporated into an agency known as the Escambia County Utility Authority.

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Prior to publishing a final EIS, EPA should update the data base of the draft EIS. If the Agency's final decision is to be based on old and now quite inaccurate data contained in the draft EIS, that decision may prove to be no more valid than the data on which it will be based.

Sincerely,

Rodney L. Kendig

Rodney L. Kendig
County Administrator

RLK/DC/bm

c: Escambia Co. Utilities Authority
Dwaine Raynor, West Fla. Regional
Planning Council

ECUA

Escambia
County
Utilities
Authority

June 22, 1984

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ATLANTA, GA.

Mr. Robert Cooper
U. S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30365

Re: Draft of EIS Issued May 1984 and
Public Hearing Held June 19, 1984

Dear Mr. Cooper:

The Escambia County Utilities Authority has reviewed the draft EIS and generally agrees with the document as presented. We also believe that this document fairly, accurately and adequately states the position of EPA with respect to the Warrington and Avondale Sewage Treatment Plants and the need for their phase out. Further, the document points out the need to remove the final effluent discharge from Bayou Chico and Bayou Marcus Creek respectively, and introduce these to Pensacola Bay via the Main Street Wastewater Treatment Plant.

It would seem that the proposed schedule for completion of the Final EIS occurring in September 1984 would compliment other efforts of the ECUA with respect to developing and presenting an application package for federal grant assistance.

The phase out of the Moreno Court Wastewater Treatment Plant should be a simple matter to include in the Warrington STP phase out. This is because the Moreno Court Plant is on an adjacent site to the Warrington Plant.

Sincerely,

Wm B. Spriggs

Wm. B. Spriggs
Manager of Engineering

WBS:pd

xc: Mr. Greg Bourne, Claude Terry & Associates
Mr. William Whitson, EPA
Mr. C. H. Wigley, Jr.
Mr. Ken Evans
Mr. Al Garza

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Daniel F. Krumel
Executive Director

Charles H. Carlan
Chairman

Larry Anchors
Vice Chairman

18 June 1984

Mr. Robert G. Cooper
Project Officer
NEPA Compliance Section
U.S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

RE: South Escambia and South Santa Rosa Counties, Florida 201 Facilities Plan

Dear Mr. Cooper:

Thank you for offering the Council staff an opportunity to review the Draft Environmental Impact Statement (EIS) for the above referenced 201 planning area. The following comments/remarks are offered for your review and use:

1. This 201 study has been in progress for a long time and has received considerable attention from the news media and citizens of West Florida. The WFRPC has strongly supported the 201 study for Escambia and Santa Rosa Counties and has provided a great deal of support to the EPA 201 Project Officer and to the EPA EIS consultants. The WFRPC staff has participated throughout the entire 201 and the EIS development, from the time that it was first discussed to the rather empty conclusion.

2. This 201 study began with a great deal of energy and was characterized by quality work. Somewhere, the entire study seems to have been allowed to degenerate into a document that has been prepared for the purpose of "closing the books". It is difficult why such an expensive and lengthy study has yielded so little.

3. The population forecasts used by the 201 study were derived from the population projections developed for the 208 Clean Water Plan for Escambia, Santa Rosa and Okaloosa Counties, Florida. These projections were generated in the mid 1970's using totally different EPA guidance. These 208 figures do not reflect the actual populations that are being experienced and are not adequate for a study being completed in the summer of 1984. The 208 population projections

"...serving Escambia, Santa Rosa, Okaloosa, Walton, Bay, Holmes and Washington Counties, and their municipalities."

are no longer realistic for certain critical areas such as Perdido Key. The fact that the population forecasts used for the 201 study EIS may be too low is not really significant, however it is significant that the "Preferred Alternative" may not provide "...for the preservation of the integrity of the environment..." and may fail to accomplish the 201 study's purpose "...to develop a preferred alternative for wastewater facilities in the study area which will minimize environmental impacts throughout the study area."

4. Is the "Preferred Alternative" preferred by any of the 201 Advisory Committee members?

5. The summary of the events of this 201 study contained in the EIS is well done.

It is unfortunate that the vigor and attention that was applied by EPA personnel to the 208 Areawide Waste Treatment Management Plan effort was not applied to the 201 planning effort for South Escambia and South Santa Rosa Counties.

Sincerely,

D.T. Raynor

D.T. Raynor
Environmental Director

cc: Charles Jeter

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Francis M. Weston Audubon Society
P.O. Box 17484, Pensacola, Fl. 32522

June 27, 1984

Re: Draft EIS (EPA 904/9-84-118) Wastewater Management, South Escambia and Santa Rosa Counties, Florida

The Francis M. WestonAudubon Society appreciates the efforts and intent of the study of wastewater management facilities for these two counties. The document is designed for 3 purposes: to provide information for the public, to provide for public participation, and to resolve conflicts. The method of organization and gathering of information in the document provices some excellent background information which can be used in the future.

We understand and support the rationale behind the "No Action" conclusion for portions of the study area. We agree that tax dollars should not be expended for public service which encourage growth in environmentally sensitive areas. We regret that there was so much delay in issuing the two final documents, possibly influincing development in the areas under study.

Our organization agrees that problems could occur in the future which can be avoided by proper planning. It is precisely that lack of planning which generated the public outcry which initiated the study originally. It is that samepublic pressure which has established zoning on Perdido Key by special act of the Florida Legislature, not the local government.

We question the conclusion that there are "few documented problems to date". The local newspaper has in the last few days listed as it does annually water quantity problems on Santa Rosa Island, water pollution problems in Bayou Grande, closing Bayou Chico to swimming and fishing, groundwater pollution from Reichhold Chemical Company. Not long ago a series of newspaper articles discussed declining harvests of fish and shellfish for commercial and recreation a problem which your document mentioned. Your own document pointed to contaminants entering the groundwater, overlapping plumes and the mounding effect of contaminants on Perdido Key. You noted that the Oensacola Bay system is in excess of its assimilative capacity. The Perdido River, which is listed as Outstanding Flroida Waterm has violations of bacteria, BOD, coliform, and heavy metal levels. Overall, you stated that the estuarine areas are on an interim between polluted and undisturbed - whatever that means.

Locally, we have been contacted by a new resident, a former environmental official from another state whose 8 years of experience was in supervision of sewage treatment systems. His daily drive takes him by the Main Street Plant where he says there may be buildup of methane gas overnight almost daily.

Your study did not give sufficient data on the value of fisheries. Both the National Marine Fisheries and the Organized Fishermen of Florida have this information. We suggest it be included, since state figures indicate that recreational and commercial fisheries area $5 million annual source of funds in Florida.

Our organization notes that the federal government has already invested considerable funds in this area: the Main Street Plant, Gulf Islands National Seashore, several Navy facilities and other capital investments. They are bought, built, or funded with tax dollars from citizens of the United States. With rapidly occuring development we recommend that federal agencies take a more active interest in activities which affect these investments.

Since our bays and estuaries are an important part of the Gulf of Mexico system, one of the more viable areas in the United States, we recommend that all efforts be expended to protect this valuable source of food.

There are some serious concerns with the Main Street Plant which is presently operating at half its design capacity. The functional design is not being properly or efficiently used. We recommend that the training of operators be upgraded so they may more aptly deal with the industrial waste which will be accepted and then disposed of into the bay.

It is our understanding that the Santa Rosa Island sewage facility will soon be expanded. Is their NPDES permit current and valid? Is anyone monitoring Santa Rosa Sound?

Our organization also points out that the following waters all within the study area have been designated by the state DER to have the HIGHESTprotection: Big Lagoon State Recreation Area, Perdido Key Sate Preserve, Perdido Key Environmentally Endangered Land, Ft. Pickens (now Gulf Islands National Seashore), Yellow River Marsh, and the Perdido River. It appears that the state and federal governments have ample reason to be very concerned, as we are, with the rapid and apparently unplanned developments which profoundly effect these areas.

Muriel W. Wagner

Muriel W. Wagner, President

P.O. Box 17484
Pensacola, Fl. 32522

Robert C. Cooper. Project Officer
NEPA Compliance Section
EPA, Region IV
345 Courtland St. N.E.
Atlanta, Ga. 30365

Due to typographical error on my part I gave erroneous information on the value of fisheries catches in Florida. It should have read that the annual dollar amount is five (5) BILLION dollars. Please include this correction in our statement. Thank you for your assistance.

Muriel W. Wagner

Muriel W. Wagner, President
Francis M. Weston AudubonSociety

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LANTA, GA.

CHAPTER VI - LIST OF PREPARERS

Project Personnel

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F. Theodore Bisterfeld	EPA Project Officer June 1980 - October 1983
Robert C. Cooper	EPA Project Officer October 1983 - Present
Wayne Garfinkel	EPA Project Engineer June 1980 - October 1983
Leonard Nowak	EPA Project Engineer October 1983 - Present

Claude Terry & Associates, Inc.

Claude E. Terry	President
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Craig Wolfgang	Environmental Planner

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Frank J. Swit	Project Manager
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